INDIANA MEDICINE

The Journal of the Indiana State Medical Association

March/April 1996 Vol. 89, No. 2

Indiana Physicians confront the Tobacco Epidemic

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features

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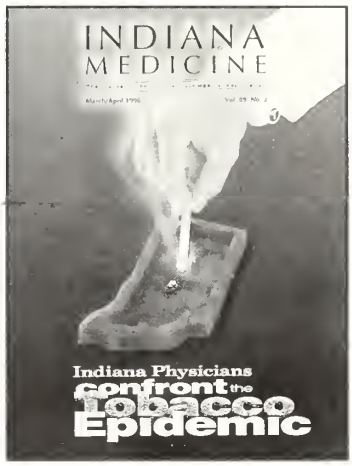

This issue is devoted to the subject of tobacco control. Cover by Medical Educational Resources Program and Medical Illustration Department, Indiana University School of Medicine, Indianapolis.

departments

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features

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letter to readers

Dear Colleague:

This issue of *Indiana Medicine* is dedicated to the serious problem of tobacco use in Indiana. Within these pages we have attempted to cover the many facets of the addiction, including the staggering scope of tobacco use among youth in Indiana; interventions for physicians to assist their patients in quitting; tobacco issues in organized medicine, public health and public policy; and the legal, ethical and educational aspects of tobacco use.

Three hours of CME credit are available for reading this journal and correctly completing the self-assessment. Additional instructions for receiving credit can be found on the self-assessment form. (See page 212.)

Please note that numerous resources are available to assist you in helping your patients abstain from tobacco use. Some resources are listed in the *Guide to Smoking Cessation* insert, which was designed to be detached for your office use. To receive a detailed list of other resources, you may contact the Indiana University School of Medicine Division of Continuing Medical Education at (317) 274-8353 or IUMEDED.MED.IUPUI.EDU on the Internet. ❑

Stephen J. Jay, M.D.
Guest editor

INDIANA MEDICINE
Devoted to the interests of the medical profession and public health in Indiana since 1908.

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stethoscope

ISMA calls on physicians to take charge of outcomes data

Physicians concerned about their lack of influence in the health care market environment can take heart and take action by working with the ISMA to take ownership of physician-specific cost and outcomes data collection and dissemination. The ISMA, in a joint working relationship with the Indiana Hospital and Health Association (IHHA), is relying on Indiana physicians to offer insights on the data collection process as the project develops. The ISMA, in an effort to relieve physicians' concerns over the use of outcomes data to label them either "good" or "bad" clinicians, sees physician involvement as an opportunity to help educate the health care marketplace on medical practice issues.

ISMA and IHHA representatives are available to discuss the project at county and district medical society meetings. Call your ISMA field representative to schedule a presentation.

ISMA to study management service organizations

Management service organizations (MSOs). What are they and can they assist ISMA members in succeeding in a changing medical climate? To find out, the ISMA has launched a case study of MSOs. An MSO contracts with physicians or hospitals to provide management and administrative services. They also secure managed care contracts from HMOs, PPOs and self-insured employers.

The case study of seven to eight MSOs around the country will provide practical information to physicians and medical societies considering MSO development or participation. The study follows up on a directive of the 1995 ISMA House of Delegates to investigate creating regional or statewide managed care programs. Thomas Gorey, J.D., president and CEO of Policy Planning Associates, Crystal Lake, Ill., will be the consultant for the project.

The ISMA is partnering with the Michigan State Medical Society, the American Medical Association, the American Academy of Otolaryngology, the Massachusetts Medical Society and the Medical Society of the District of Columbia on the study.

ISMA membership survey to collect managed care information

The ISMA is conducting a survey to gather more information about its members, their practices and their communities. The 1996 Strategic Health Survey, which will be mailed to all active members in May, will collect socioeconomic and managed care information. All responses will be confidential and only aggregate responses will be reported. As was done in the 1994 Strategic Health Survey, one survey response will be selected at random from the completed surveys. The physician whose survey is selected will receive one free year of ISMA dues. ❑

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guest editorial

Tobacco control in Indiana – Faith in a seed

Stephen J. Jay, M.D.
Indianapolis

"Though I do not believe that a plant will spring up where no seed has been, I have great faith in a seed. Convince me that you have a seed there, and I am prepared to expect wonders." – Henry D. Thoreau

The seeds of tobacco control were originally planted with the seeds of Nicotiana tabacum. But, the former have taken much longer to germinate than the latter.

Clinicians and scientists have known of the hazards of tobacco use for more than 150 years. The early literature is remarkable, for it shows how long ago keen observers recognized the addictive and disease causing capacity of human tobacco consumption.

For example, a statistical analysis of the effects of smoking on mortality of patients with tuberculosis found, in 1908, that mortality among smokers was more than three times the mortality among nonsmokers.[1] Closer to home, W.H. Williams, M.D., of Lebanon, Ind., in the early 1900s, cited tobacco smoking as, "'very conducive' to development of laryngeal cancer."[2] Also from Indiana, John N. Hurty, M.D., Indiana state health commissioner (1862-1922), commented in 1912 that, "Tobacco is, of course, a drug. If it did not contain a drug it would not be in demand. Like other drug habits, when it is once fastened upon a person it is difficult indeed to throw off."[3]

Almost 60 years ago, in 1938, the eminent epidemiologist, Raymond Pearl, reported that in a study at Johns Hopkins University, of more than 6,000 individuals, the lifespan of smokers was significantly shorter than of nonsmokers.[4] Twenty-six years would pass before the U.S. Surgeon General's first report on smoking would be issued in 1964!

In the intervening years, society has reaped many crops of Nicotiana tabacum. Unfortunately, a world pandemic of disease and death caused by tobacco use has been our bitter harvest.[5]

But, society and health professionals are rising to the challenge. Leaders in public health, such as those recognized within this special issue, have raised awareness as to the enormity of the tobacco problem. In 1922, Bernarr Macfadden said, "Tobacco adds immeasurably to the cost of human existence; it subtracts immeasurably from the length and breadth of human life."[6] The echoes of these words are beginning to reverberate in state legislatures and Congress, where proposed cuts in funding for health care must be rationalized with the costs to society of diseases caused by tobacco of more than $50 billion per year.

While progress in tobacco control in government is important, real gains will occur only at the grass-roots level. Physicians have a unique opportunity to lead the effort.

The seeds of tobacco control were planted long ago. The authors of this special issue of *Indiana Medicine* hope the information contained herein will provide "sunshine and water" to promote germination! If we are successful in implementing tobacco prevention and cessation activities in Indiana communities, we should not only expect, but realize, the wonders of our tobacco control efforts in the years to come. ❑

Dr. Jay is guest editor for this special issue of Indiana Medicine. *He is assistant dean for continuing medical education and professor of medicine at the Indiana University School of Medicine.*

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Indiana physicians recognized for tobacco control efforts

Stephen J. Jay, M.D.
Indianapolis

Perhaps no state can boast more substantive contributions of its physician leaders to tobacco control than Indiana. The people recognized here represent a small fraction of the many health professionals from across Indiana who have dedicated themselves to improving health through tobacco control. But, these four people each have contributed directly to shaping public policy and charting the future course of tobacco control in the United States and worldwide. For this reason, we want to present their brief biographies to our readers.

This information will no doubt rekindle fond memories among physicians who are familiar with these individuals and their work. For others, particularly younger physicians, the information may be a revelation. Some readers perhaps will be stimulated enough by the accomplishments of these remarkable men to pursue positions of leadership in preventive health and tobacco control for the 21st century.

Leroy Edgar Burney, M.D.

Leroy Edgar Burney, M.D., was born in Burney, Ind., and graduated from Indiana University (B.S., 1928; M.D., 1930) and Johns Hopkins University (M.P.H., 1932). He was on the faculty at the Indiana University School of Medicine and was commissioner of the Indiana Health Department from 1945 to 1954.

Dr. Burney

Dr. Burney became surgeon general of the U.S. Public Health Service and on July 12, 1957, he was the first Public Health Service official in the United States to publicly acknowledge the causal relationship between cigarette smoking and lung cancer. In 1959, he stated in the *Journal of the American Medical Association* (1959;171:1829-1837), "the weight of evidence at present implicates smoking as the principal factor in the increased incidence of lung cancer." Dr. Burney's bold first step facilitated the creation of the Advisory Committee on Smoking and Health, which issued the now famous 1964 surgeon general's report.

John Bamber Hickam, M.D., (1914-1970)

John B. Hickam, M.D., was born in Manila, Philippine Islands, the son of a native Hoosier, Col. Horace Hickam, an aviation pioneer, for whom Hickam field in Honolulu was named. Dr. Hickam was graduated summa cum laude from Harvard University (A.B., 1936) and cum laude from Harvard University School of Medicine (M.D., 1940). In 1958, he became chairman of the Department of Medicine at the Indiana University School of Medicine.

Dr. Hickam

At his untimely death in 1970, Dr. Hickam was recognized widely as one of the foremost leaders in American medicine. Because of Dr. Hickam's exceptional leadership qualities and pre-eminence in cardiopulmonary research, he was selected by Surgeon General Luther L. Terry, M.D., as one of 10 members of the original Surgeon General's Advisory Committee on Smoking and Health in 1962. As one of the authors of the 1964 surgeon general's report, Dr. Hickam contributed directly to the creation of a blueprint for public health policy that has had a profound impact on tobacco control throughout the world.

Lewis C. Robbins, M.D., (1910-1990)

Dr. Robbins

As founder of the Society for Prospective Medicine in 1965, Lewis C. Robbins, M.D., was nationally recognized as the "father" of prospective medicine, a medical philosophy dedicated to improving human life through preventive health. He was a native Hoosier and graduated from Indiana University and Indiana University School of Medicine (1935). He obtained an advanced degree in public health from Johns Hopkins University. After early work at the Indiana State Board of Health, he joined the U.S. Public Health Service (PHS) where he became the first

chief of cancer control for the PHS (1957-1965).

When he retired from the PHS in 1968, Dr. Robbins collaborated with Jack H. Hall, M.D., at Methodist Hospital in Indianapolis and others to develop Health Hazard Appraisal, a methodology for assessing a person's personal disease risks and proposing lifestyle changes to reduce these risks. Much of Dr. Robbins' innovative work for more than 40 years was devoted to smoking cessation and tobacco control.

Otis R. Bowen, M.D.

Otis R. Bowen, M.D., was born in Richland Center, Ind., in 1918, and graduated from Indiana University (1939) and the Indiana University School of Medicine (1942). After practicing family medicine in Bremen, Ind., he entered politics, ultimately becoming the first governor of Indiana to serve two successive four-year terms (1973-1981). Dr. Bowen became the Lester D. Bibler professor of family medicine at the Indiana University School of Medicine, where he directed undergraduate family practice education.

Dr. Bowen

In 1985, he was nominated by President Ronald Reagan and confirmed by the Senate as secretary of the Department of Health and Human Services (HHS), where he served until Jan. 20, 1989, longer than any previous HHS secretary. During his tenure at HHS, Dr. Bowen sent five reports from his surgeon general, C. Everett H. Koop, M.D., to the president. Two of these reports have become milestones in the history of tobacco control. The 1986 report provided extensive documentation of the public health hazards of passive smoking. The 1988 report presented exhaustive scientific and clinical evidence of the marked addictive properties of nicotine in tobacco. Dr. Bowen's strong support of C. Everett Koop's landmark reports assured that sharp focus would be drawn on the public debates surrounding tobacco control. Recent proposals to regulate tobacco came directly from these pioneering efforts of Drs. Bowen and Koop.

Dr. Bowen continues to participate actively in the affairs of our community. The Bowen Center at Indiana University researches behaviors that lead to self-inflicted disease from tobacco, alcohol and other sources. ❑

Correspondence and reprints: Stephen J. Jay, M.D., Indiana University School of Medicine, 1120 South Dr., FH 302, Indianapolis, IN 46202-5114.

A conversation with C. Everett Koop, M.D.

Stephen J. Jay, M.D.
Indianapolis

C. Everett Koop, M.D., was born in Brooklyn in 1916, received his M.D. from Cornell University in 1941 and, in a 35-year career at Children's Hospital at the University of Pennsylvania, became one of the nation's foremost pediatric surgeons.

From 1981 to 1989, Dr. Koop served as surgeon general of the United States Public Health Service and Director of International Health. During this period, Dr. Koop became recognized internationally for his efforts in raising awareness of the devastating effects of tobacco use on human health in the United States and worldwide.

His work schedule today includes 90-hour work weeks. He teaches medical students at Dartmouth College, where the Koop Institute is based. He is chairman of the National Safe Kids Campaign, Washington, D.C., and is producing 75 point-of-diagnosis videos over the next two years for *Time-Life Medical*, of which he is chairman of the board.

On Sept. 13, 1989, when Dr. Koop made his last appearance as surgeon general before the U.S. Congress, he spoke eloquently about the issue that he had become most clearly associated with, tobacco and health, specifically, the topics of tobacco advertising and children's access to tobacco products – issues that Dr. Koop addresses in the following interview with *Indiana Medicine*.

Dr. Jay: During your watch as surgeon general of the United States, eight reports on the health consequences of smoking were issued from 1982 to 1989. What do you believe is the most important legacy of your tobacco control efforts during these years?

Dr. Koop: I think there are three things. Two reports were really landmarks: the one on passive (side-stream) smoking[1] which began the whole movement toward getting clean air in public places like restaurants and led eventually to my getting the studies done that enabled the Senate to take action against smoking on airplanes. I think, judging by what people say to me as I travel, there are more people grateful about smoke-free airplanes than any other single thing. It's especially true of flight attendants.

The next report that I think was very important was the addiction report[2] because all the people had, sort of, done soft-shoe dances around addiction. I came out and said it was as addictive as heroin or cocaine. That got front-page headlines in every major newspaper with pictures all over the country – that was news! Addiction is the thing that tobacco companies hate more than anything else. During my tenure, when we tried to change the labels on advertising and cigarette packages, we really initially had five things we wanted to change. We got four of them in quite readily by dropping the fifth one. The fifth one was that "tobacco contains nicotine which is an addictive drug." That's the one thing they can't stand, and so I think it was an important report.

I'd say the things that are outstanding for me are those two reports, plus the fact that as surgeon general, I went beyond just talking about the health consequences of smoking, and whenever possible, I pointed out the sleazy manner in which the tobacco industry does its business. It was hard to do that because I knew about secret documents and things that had never been made public. But now that Brown & Williamson Tobacco Corporation's internal documents are part of the public record,[3] the whole thing is based on those papers. We now have a whole new footing on which to stand in reference to tobacco litigation.

Dr. Jay: In the six years since you left the position of surgeon general, the pace of change in tobacco control seems to have quickened with recent Congressional hearings and Food and Drug Administration reports. David A. Kessler, M.D., FDA commissioner, in a hard-hitting editorial in the *New England Journal of Medicine*,[4] raised the issue of regulation of nicotine-containing tobacco products. Could you speak to that issue? Should the FDA regulate tobacco products as drugs?

Dr. Koop: I think if it were not for the strange culture in America concerning tobacco – the fact that tobacco money won the American Revolution and that Congress has always dealt with tobacco-growing

states as though they had most favored nation status – we should have regulated tobacco years ago. But Congress declared that tobacco was not a cosmetic, not a drug and not a food and therefore did not come under the purview of the FDA. Now that we have those documents and we know that cigarettes not only contain natural nicotine and tobacco but are "spiked" with nicotine as well, I think there's no doubt about the fact that the FDA should regulate tobacco as a drug.

Dr. Jay: In the preface to the 1982 surgeon general's report,[5] you stated, "Cigarette smoking is the chief single avoidable cause of death in our society and the most important public health issue of our time." In the 13 years since you made that statement, progress has been made in tobacco control, but at somewhat of a slow pace, considering the magnitude of the problem. Recent findings from the study of Dr. Lloyd Johnston at the University of Michigan[6] and the CDC[7] suggest that smoking among young children and youth (8th graders through 12th graders) has increased sharply. What can we do in 1996 to hasten progress in reducing the burden of tobacco-related disease in our society?

Dr. Koop: I'm glad you raised that paradox because everything you said about the stepped-up interest in making the air free of tobacco in going toward a smoke-free society by the year 2000, the apparent perjury of the tobacco executives when they stood before Congressman Waxman's committee and said that they didn't know that tobacco was considered addictive or that it caused any diseases – I think all of these things have been remarkable progress.

But the sad thing is that, in spite of that, smoking in teen-age boys and girls has gone up. You have to wonder why. I think there are two reasons. When I left office, tobacco companies were spending an aggregate $4 billion a year; now, it's reported to be $5 billion, essentially saying that all the health messages that they get from government or private sector are wrong. So, they have not only stepped up their campaign, but they have introduced things that ethically their own code really prevents them from doing, such as pandering to youngsters as they do with Joe Camel.

Let me say, parenthetically, you may have seen the huge two-page ad (*Wall Street Journal*, June 28, 1995) in major newspapers around the country from Philip Morris saying that they want to do everything they can to keep children from smoking. That's such a grandstand play, but the very way that they state it makes kids want to smoke because they say "smoking is an adult decision." Every kid wants to make an adult decision, so he's going to make a decision to smoke, if he can. They do this kind of underhanded, sleazy kind of advertising, and it's very hard for the government, with an extraordinarily limited budget, to be able to do anything to counteract that.

Another thing is that, since I left office, I don't think there has been the constant hammering away at the process by the surgeon general. I did a lot of other things besides smoking, but I never stopped talking about smoking, and I never stopped bringing that to the forefront of the public's attention whenever I could, and I think that's been lacking. We've had times when there was no surgeon general, and we've had times when the surgeon general was not as vociferous as I had been in making this clear.

Now, your question was, "What can we do to hasten progress in reducing the burden of tobacco-related disease?" There are a lot of things that can be done that are hard to do right now because we don't have a committee on health in the House which is favorable to what we want to do in smoking reduction; we have a free enterprise, pro-business Republican Congress that takes a dim view of the possibility of regulating tobacco products as Kessler has suggested. So, I think there are things that can be done from the top-down and from the bottom-up. Grass-roots things work very well, and we've got to get parents interested in local, regional and state government so that the existing laws which prohibit the sale of tobacco to minors are enforced. There's hardly a place in this country where a kid can't go into a supermarket or a convenience store or some other place and buy cigarettes. Some are asked, "Are you old enough?" and the answer will be, "They're not for me, they're for my dad." The other thing is vending machines where there is no way that you can control who purchases them. These are things that can be worked on by local grass-root groups.

The best thing that can happen from the government's point of view is to increase the tax on cigarettes. There's no doubt about the fact that that is the single most effective way to cut down on the consumption of tobacco. We know from studies in Texas that if you

increase the total cost of a box of cigarettes by 10%, there's a decrease in teen-age smoking of 12%. We know that in Canada when they raised the price of cigarettes to about $5 a box, smoking in young people fell off 60%. That has its downside, too, because as soon as that happened in Canada, a criminal element in the United States and Canada got together and began importing cigarettes across the border for the black market to sell at much less than the market price. The crime was so great in Ontario because of that, that they backed off on the tax in order to reduce the crime. It's rather a sad commentary on the greed of some parts of our society.

But, if we don't do something from the top and the bottom to try and curb teen-age smoking, we will have lost the gains of all the past 30 years, which have really been remarkable – reducing smoking from 55% to 26%. But, once you get something started like this, it's very difficult to turn it back, so I would say we've got almost a decade's fight ahead of us to reverse this trend and begin to see smoking at the level it was when I left office in reference to teen-agers. The sooner we get onto that, the better.

That's why you need somebody in an office like the surgeon general who hammers away at the public on what's happening to their children, because the number of children in this country who are living normal, happy lives today but who will die from smoking is an unbelievable number. Peto at the University of Cambridge has estimated that of the children living in China today, 500 million will die from smoking causes. That's such a staggering number that you can't absorb it.

Dr. Jay: It has been suggested in some of the budget-cutting rhetoric that the office of the surgeon general is no longer necessary. Is there a serious effort to do away with the surgeon general's office? What implications would that have for tobacco control?

Dr. Koop: Four bills have been presented to eliminate the office. I think it's rather pathetic that this Congress, not liking the last two designations by President Clinton for surgeon general, has decided the way to settle the problem is to get rid of the office. If you carried that to its logical conclusion, we ought to get rid of the presidency because only 40% of Americans voted for Bill Clinton. It's really an insanity. The House has already voted in committee not to fund the surgeon general's office as far as appropriations are concerned. Whether or not cooler heads will prevail or not, I don't know.

There are a tremendous number of things that this Congress doesn't know about the surgeon general. In fact, this Congress knows very little about how any agency works. They have no idea how commerce works, labor works, education, HHS, etc.

When it comes to the public health service, I think their knowledge is abysmal. If you don't have a public health service and it's being destroyed right now and you don't have a surgeon general, a lot of things that are already statutory will disappear. The statutes say that there will be an annual report by the surgeon general to Congress on some aspect of smoking and health. Those reports have been the backbone of the fight against tobacco. If we had not had them, I don't think we could have ever made the inroads that we have.

Dr. Jay: In September 1994, Dr. Peto, a preeminent epidemiologist, published a comprehensive study regarding the tobacco pandemic.[8] Data were presented to indicate that approximately half of all adult smokers who begin smoking in their teens will be killed by tobacco. We know that approximately 3,000 young people become dependent upon tobacco daily in the United States. Recently, Dr. Kessler has called tobacco use a "pediatric disease."[4] What steps do you recommend that physicians, whether pediatricians or general physicians or family physicians, take in managing underage tobacco use?

Dr. Koop: The first thing that somebody has to do is educate physicians as to the whole story of tobacco smoking. You've just said that people who start smoking in their teenage years become veteran smokers and these are the ones of whom a third will die. That's true, but that's not the question to ask. The question to ask of young people is, "When did you decide that you would start smoking if you could?" That age is 8. So, what we do is, after a kid has already decided that, "As soon as I get out of this house and as soon as I can go to school without my mother watching me, as soon as I'm in junior high school, I'll be smoking – I'll be cool – I'll look like Joe Camel's people – I'll be smoking Camels." That's exactly what he does. So, when you approach a teenager at 13 and tell him that he

shouldn't smoke, he's laughing at you with a tobacco-flavored breath and hiding his laughter with tobacco-stained fingers. He's already been in there for five years. So, we've got to get the pediatrician and general practitioner and generalist medical doctors to understand that fact.

If I had my way, I would start teaching parents at the first intake of a new baby into a pediatric practice that one of the things they've got to avoid is passive smoking for the youngster because the studies all show developmental changes in children who are exposed to the passive smoking of their parents. If you start with that and make the parents understand what they're doing to their children and that they've got to protect them before they can protect themselves, then they need to raise their kids to protect themselves. I think that's the only way to go. No effort that I know has ever been undertaken to get pediatricians to do that. I think it should be; it should become one of the objectives of the American Heart Association, the American Lung Association and the American Cancer Society; I would be moving in that direction if I were still surgeon general.

The thing that is so important is to get pediatricians aware of it. We did an experiment recently on having pediatricians understand the danger of loaded guns in homes and how that contributes to the unintentional deaths of so many children across the country. I did a tape for pediatricians on a pilot basis that they could listen to in their cars suggesting that part of every history they take of a new patient should include, "Do you have a gun in your house?" "Where are the bullets kept?" "Is it locked up?" etc. This begins to make parents aware of a big danger for their children. The exact same thing could be done for tobacco.

Dr. Jay: In 1900 in the United States, one in five people died from tuberculosis, and a remarkable TB control effort, including public and private sectors, succeeded in dramatically reducing the incidence of this disease over several decades. Today, we're in the midst of an epidemic of equal magnitude but entirely man-made. Tobacco use today accounts for about 20% of all deaths in the United States. We've mounted a considerable anti-tobacco effort. But, we have a tobacco industry marketing budget of more than $5 billion per year aimed at encouraging young people to use tobacco. How can we respond adequately to an epidemic where the "infecting agent" is not a microorganism but the aggressive marketing of tobacco products that cause nicotine addiction?

Dr. Koop: You've got to stop the tobacco industry. If you had had the XYZ industry spending $5 billion yearly, or its equivalent, about the time when I was in medical school saying all this nonsense about tuberculosis is for the birds and just don't pay any attention to it; it's not a serious disease; it won't hurt you, and it isn't spread the way they say it is – we'd still have tuberculosis with us. So, we've got to get at what makes the difference between the attack on tuberculosis and the attack on tobacco. The difference is the tobacco industry. They are saying that government is wrong; the health people are wrong; if you want to succeed in life, in politics, in glamour, in labor, in scholastic work, in sports, in sex – you'd better be smoking, because look at these wonderful people we have in these glossy pictures, inferring that that's how they got where they are. So, I would eliminate advertising; I would make it absolutely illegal to have such characters as Joe Camel pandering to children. If I had my way, I would have only tombstone advertising for cigarettes. Countries like Finland that have done that have been very successful.

Dr. Jay: You have been involved recently in teaching at Dartmouth and in producing materials related to public health. Could you comment on your current activities and the extent to which these impact the issue of tobacco control?

Dr. Koop: Personally, I still respond when I can to invitations to speak to various groups about the dangers of smoking or of smokeless tobacco. What we're doing at Dartmouth is really following the mission of the Koop Institute, which is to reform medical education. One of the ways we're doing that is to teach medical students to be better communicators; we do that by having them teach, with grade school teachers, things about the human body, prevention of disease and promotion of health to grade school children. We also do this in middle schools and high schools. Part of that program from beginning to the end is: "Don't smoke." So, we're trying to teach medical students to make the "no smoking" message a very central

core of the kinds of things that they talk to families and patients about.

Dr. Jay: Would you comment regarding the role of litigation in tobacco control?

Dr. Koop: With the disclosures made by Brown & Williamson's secret papers – and we know that they exist in the other tobacco companies as well – I think the whole future of tobacco liability cases will change. There never has been a case won against the tobacco company for the death of a patient from smoking. One of the reasons why is that some of these documents had been leaked. No judge ever permitted them to be used as evidence. But, now, they're in the public domain. They've been discussed before Congress. They're in the Congressional Record, and no judge can say that they cannot be submitted as evidence. So now, when a jury knows that for 30 years the people who sell tobacco have not only known it was addictive, and they knew that it caused heart disease and cancer and stroke and emphysema, I think a jury is going to bring in a very large award against some company in favor of a plaintiff. When that happens, I think the whole underpinning of the financing of the domestic tobacco industry will be in jeopardy. I couldn't be happier about that. However, don't start to cheer from the housetops because for every buck they lose here, they make two overseas in the reprehensible way in which this country exports disease, disability and death to developing countries. ❑

Stephen J. Jay, M.D., guest editor of this special issue, conducted this interview. The transcript of the entire interview has been edited, and key references have been included.

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A conversation with Ronald M. Davis, M.D.

Bob Carlson
Indianapolis

Cigarette smoking kills about 420,000 Americans every year, according to the Centers for Disease Control and Prevention. That's one-fifth of all deaths in this country annually, and more than the combined number of deaths from alcohol, cocaine, heroin, suicide, homicide, car crashes, fires and AIDS.

To find out more about tobacco use prevention, *Indiana Medicine* talked with Ronald M. Davis, M.D. After 11 years of working for federal and state government, Dr. Davis accepted the directorship of the Center for Health Promotion and Disease Prevention at the Henry Ford Health System in southeastern Michigan in September 1995. He had been the chief medical officer in the Michigan Department of Public Health since 1991. From 1987 to 1991, Dr. Davis served as director of the U.S. Centers for Disease Control's Office on Smoking and Health.

Dr. Davis received his medical degree and a master of arts degree in public policy studies from the University of Chicago. He also completed the Epidemic Intelligence Service program and the preventive medicine residency program at CDC. From 1984 through 1987, he served as the first resident physician member of the American Medical Association's Board of Trustees. He was elected to the AMA Council on Scientific Affairs in June 1993.

Dr. Davis has published widely in peer-reviewed journals and has received numerous honors and awards, including the Surgeon General's Medallion and the American Public Health Association's Jay S. Drotman Memorial Award. He is a member of the World Health Organization's Technical Advisory Group on Tobacco and Health and is the editor of *Tobacco Control: An International Journal*, which was launched by the British Medical Association in 1992.

Indiana Medicine: You were the first resident physician member of the AMA Board of Trustees and throughout your career in public health, you have actively sought to bring organized medicine and the public health sector into collaborative relationships. Can you cite some specific examples of how such collaboration has resulted in the development of successful preventive health programs?

Davis: Let me give you three examples. First, in the area of tobacco, the AMA has received a $10 million grant from the Robert Wood Johnson Foundation to administer a grant program called "Smokeless States." In this program, the AMA has disbursed grants to a dozen or so states to give them resources to do creative and aggressive tobacco control, based in particular on strong coalition-building. That program has allowed many states to do things that might not have been possible under other grant programs administered by the federal government, for example. That program has shown how well organized medicine can get into the business

Ronald M. Davis, M.D.

of preventive medicine and public health, and I say public health there because these state grants have usually involved the state health departments in a major sort of way.

Another example is a grant the AMA received from the Centers for Disease Control and Prevention to develop what are called Guidelines for Adolescent Prevention Services, or GAPS. These are guidelines for pediatricians and family physicians to use with their adolescent patients to promote health and prevent disease. GAPS has been published by the AMA with 15 different chapters covering substance abuse, prevention of sexually transmitted diseases, prevention of injuries, and so on.

Here in Michigan, we are testing the implementation of GAPS in a school-based clinic. GAPS could be used in a physician's office, a school-based setting or a public health clinic. One of the key strategies being used in public health is to use primary care providers to

do prevention, and GAPS is an excellent tool for that.

Let me give you one other example at the state level. The Michigan Department of Public Health has given grant support to the Michigan State Medical Society at a level of about $140,000 a year for a number of years to allow the state medical society to do professional education and public education in the area of HIV/AIDS. That money supports a speakers bureau for talks on HIV/AIDS to school kids, to community organizations, to hospitals in grand rounds sessions, for example. That collaboration has been very helpful to the state public health department in Michigan to help educate the public and the medical profession on HIV/AIDS.

Indiana Medicine: As a former director of the CDC's Office on Smoking and Health, you oversaw the development of several Surgeon General's reports. One of these, the 1988 report on nicotine addiction, has provided the impetus for FDA Director David Kessler, M.D., to classify tobacco as a drug and to propose regulation aimed at preventing nicotine dependence among young people. Do you believe, first of all, that tobacco is a drug?

Davis: There is really no question that nicotine is an addicting drug and that tobacco products are addicting. The Surgeon General's report in 1988 laid out all the evidence to back up that conclusion in 600-plus pages, and most leading health authorities and addiction experts would agree that nicotine is very addicting.

Indiana Medicine: Should tobacco, therefore, be regulated by the FDA?

Davis: It should have been regulated by the FDA a long time ago, but fortunately the FDA is moving forward quickly now to bring tobacco under its regulatory authority. The federal Food, Drug, and Cosmetic Act allows the FDA, in fact obligates the FDA, to regulate products that are intended to affect the structure or function of the body, and clearly, nicotine-containing products affect the function of the body. Nicotine is very physically and pharmacologically active in the body, and its psychoactive effects in particular represent a hallmark of an addicting drug. The key issue was to determine whether those effects were intended by the manufacturers of those products, and the FDA has laid out a very convincing case that the manufacturers of cigarettes and smokeless tobacco intended for their customers to become addicted and to remain addicted. That evidence has surfaced from internal industry documents, from industry patents for new products, from research published by tobacco industry scientists, and from the companies' marketing, advertising and promotional activities.

Indiana Medicine: During your tenure as Michigan's chief medical officer from 1991 to 1995, you worked closely with the Michigan State Medical Society on the legislative effort that resulted in the largest cigarette tax in the U.S. Michigan's tobacco tax increase from 25 cents to 75 cents per pack resulted in more than $550 million in revenues, $35 million of which was allocated for public health programs in Michigan. At a time when increasing taxes seems like a politically difficult thing to propose, do you believe that taxing tobacco products is good public policy?

Davis: It certainly is, and in many ways, tobacco taxes represent a win-win policy. First, it raises needed revenue. Second, it saves lives. Third, people like it, compared to other sources of revenue. And fourth, it actually increases jobs in states that don't grow tobacco. It might surprise people to hear that, but it comes out of research conducted by Professor Ken Warner and colleagues at the University of Michigan School of Public Health. They published a study in the *Journal of the American Medical Association* last year which determined that many jobs would be created if tobacco were to disappear from Michigan. The reason is that when people in Michigan buy tobacco, much of that money, maybe most of that money, will go to North Carolina, Kentucky and other tobacco-growing states. If they didn't smoke cigarettes, they would tend to spend that money on other goods and services, most of which would go to people and businesses in Michigan and would create jobs here. That argument can be made for other states that don't grow tobacco. So a tobacco tax increase is good public policy for those four reasons and probably for many others as well.

Indiana Medicine: Have there been any studies or data to suggest how many lives been saved in Michigan as a result of this tax?

Davis: It's too early to come up with a firm estimate of how many lives have been saved or will be saved, but we did estimate during the campaign that the tax increase would reduce the number of smokers in Michigan by 143,000 adults and by 29,000 teenagers and that these reductions in the number of smokers would result in 69,000 lives saved over the long term. We made the point that there are few things in public health that we could do that would accomplish such an improvement in public health with such ease as an increase in the cigarette tax.

I don't think there's any question that lives have been saved. Cigarette sales are down by about 20% now compared to the period of time before the tax was increased. Most of that drop in sales is due to fewer teens taking up smoking and more adults quitting smoking. Some of it may also be due to smokers smoking fewer cigarettes a day. So there will be gains in health and quality of life and life expectancy from all of those effects.

Indiana Medicine: In September 1995, you assumed a new position, director of the Center for Health Promotion and Disease Prevention of Henry Ford Health System, one of the largest health systems in the country. How will this center support the needs of physicians, other health professionals and their patients at HFHS?

Davis: We will be promoting prevention in clinical settings through a variety of means, including supporting clinical preventive services by physicians and other health care providers; the development, validation and dissemination of patient educational materials; and some direct patient counseling in areas such as hypertension, diabetes, nutrition and smoking cessation. We will also be working in the community with activities such as work site wellness and community health promotion – for example, screenings at health fairs. We'll also be using health communication tools to get the message about healthy lifestyles out directly to the public through the mass media and by working with community-based organizations and other health allies.

Indiana Medicine: You were instrumental in developing a peer-reviewed scientific journal *Tobacco Control: An International Journal*, published by the British Medical Association. For the past five years you have served as the founding and only editor of this journal. What role do you believe this journal plays in international efforts to prevent tobacco-related disease and death?

Davis: The tobacco trade is global in nature, and there are a handful of multinational tobacco companies, based primarily in the United States and the United Kingdom, that are working aggressively throughout the world to promote tobacco use, especially in developing countries. The international health community is only now beginning to develop strong networks so that we can get our message out and so that we can work collaboratively and cooperatively across national boundaries.

I hope that our journal can play an important role in that communication and in that information-sharing. We have associate editors and members of our editorial advisory board who come from more than 30 countries. We have readers who come from many more countries than that. We're certainly in all regions of the world, and we publish material on tobacco and health that focuses not just on the United States but on what is happening overseas. We all have a lot of lessons that we can learn from each other, and that's a major goal of the journal, to allow us to share those lessons that we've learned in our own back yards. The journal has scientific articles similar to those seen in other peer-reviewed journals, but unlike most other journals, it also has a large portion devoted to news, commentary and review of activities of the tobacco industry.

Indiana Medicine: Organized medicine has stepped up efforts in recent years to control the tobacco epidemic. The AMA, under Dr. James Todd's leadership, has contributed greatly to tobacco control in the United States. The British Medical Association is publishing the journal you edit. From your international perspective, is there a trend for medical societies and associations to become more involved in tobacco control?

Davis: I think there is. Medical societies are perceived by much of the public and by the media as professional trade unions. These organizations have focused their energies on pursuing matters of concern to their members, and those include socioeconomic issues as well as pocketbook issues. But I think in recent years, medical societies have become more and more oriented toward public health is-

sues and the need to promote health and prevent disease in the communities in which we see our patients. As a result, I think we're seeing organizations like the AMA and the BMA and state and county medical societies becoming involved in public health programs and campaigns, both as partners and as primary sponsors.

One thing that Indiana needs to do as a state is to increase its own cigarette taxes. Indiana's tax is 15.5 cents per pack, which creates a huge disparity in cigarette prices between Michigan and Indiana and which probably leads to some cigarette smuggling between the two states. We're always getting hit with press releases being put out by tobacco interests and smokers' rights associations talking about the "uncontrolled" smuggling occurring between Michigan and states that have low taxes on tobacco. I think most of those claims are hyped up, but I would admit that some smuggling goes on, and we wouldn't have a problem if states like Indiana increased their tax to our level. ❑

Bob Carlson is a health care writer based in Indianapolis.

ASSIST: Making a difference in Indiana

Kelly L. Bishop
Indianapolis

Tobacco use remains the leading preventable cause of death and disability in Indiana. Each year, approximately 10,000 Hoosiers die from smoking- related diseases. Tobacco use costs every man, woman and child in Indiana approximately $548 per year in health care costs.[1] Nonsmokers also suffer from involuntary exposure to environmental tobacco smoke (ETS). While tobacco use rates among adults have declined a modest 1% in five years (27.3%, 1988; 26.4%, 1993)[2], Indiana youth continue to use tobacco at alarming rates. According to the Indiana Prevention Resource Center, 40% of high school seniors, 30% of ninth graders and 20% of seventh graders in Indiana use tobacco.

The National Cancer Institute (NCI) has conducted major research programs to develop effective interventions to reduce the prevalence of tobacco use. Indiana ASSIST is a part of the NCI's American Stop Smoking Intervention Study (ASSIST) for cancer prevention.

ASSIST, the largest tobacco control program ever conducted by the U.S. government, provides the state-of-the-art process for local community members to help prevent tobacco use, protect nonsmokers from ETS and assist those who use tobacco in quitting. Individuals from businesses, schools, community groups and health care settings serve as ASSIST coalition members. By working together through ASSIST coalitions, individuals and organizations can be instrumental in reducing the number of smokers in the state, preventing children from using tobacco, preventing unnecessary disease and death and reducing the financial toll tobacco places on all Hoosiers.

Indiana is one of 17 states selected by the NCI to implement the ASSIST Project, which is funded through 1998. Indiana ASSIST is a partnership of the Indiana State Department of Health (ISDH) and the American Cancer Society, Indiana Division (ACS). The mission of Indiana ASSIST is "to improve the quality of life in Indiana by promoting tobacco-free, healthy lifestyles among Hoosiers through community action and advocacy, to prevent tobacco use, provide assistance to tobacco users who want to quit and protect nonsmokers from environmental tobacco smoke." The goals of this seven-year program in Indiana are to: reduce to 17.7% the number of adult smokers; maintain the use of smokeless tobacco among adult males at less than 4%; and reduce the number of youth who start using tobacco by 50%.[3]

The ASSIST model is the culmination of more than 40 years of tobacco control research. Early tobacco control interventions focused on individual change, including educational programs, cessation programs and self-help materials. While these interventions had some success, the sustainability of the success was often short-lived. More recent tobacco control interventions, including ASSIST, focus on changing the social acceptability of tobacco use through public and private policies and extensive media campaigns to discourage tobacco use.[4] Smokers who quit are more likely to remain nonsmokers in an environment that promotes nonsmoking as the norm. Children are less likely to use tobacco products if the financial burden is high. Media messages, which promote policy changes, deglamourize tobacco use, and promote tobacco-free, healthy lifestyles have been successful in altering the social climate concerning tobacco use.

Indiana ASSIST is comprised of a state-level coalition and five local coalitions. Local coalitions are active in northeast, north central, northwest and central Indiana, as well as Vanderburgh County. Indiana ASSIST also provides technical assistance and resources to communitites outside ASSIST coalition areas. More than 500 individuals and organizations are participating members of Indiana ASSIST coalitions.

Indiana ASSIST efforts promote four major tobacco control policy areas: clean indoor air, youth access to tobacco, advertising and promotions, and taxes. Indiana ASSIST provides training resources and technical assistance to Hoosiers to advocate for these changes.

Clean indoor air

Indiana ASSIST coalitions have made outstanding accomplishments in raising public awareness and creating a greater voice for clean indoor air policies. A "Go for Atmosphere" clean indoor air campaign has been implemented throughout the state. Coalition members have worked with public

and private decision makers on the state and local level to promote the adoption of policies protecting nonsmokers from secondhand smoke. As a result, work sites, restaurants, malls, schools and health care facilities have implemented nonsmoking policies, and local governments have promoted or adopted nonsmoking ordinances.

Youth access to tobacco

The issue of youth access to tobacco continues to be one of the most popular activities among coalition members. The successes achieved in Indiana are many. Coalition members mobilized a grassroots support network to defeat tobacco industry sponsored legislation in the 1995 Indiana General Assembly that would have weakened the state's current youth access laws. Youth advocate groups are being developed in all local coalition areas, empowering youth to take an active role in protecting themselves and their peers from tobacco advertising and promotions and illegal sales to underage youth. Indiana ASSIST has cultivated strong allies for the enforcement of youth access laws. Educational programs and compliance checks conducted by law enforcement officials have elevated the awareness and concern for sales of tobacco to underage youth among retailers, citizens, law enforcement officials and health care professionals. As a result, illegal sales of tobacco to youth are decreasing in some areas of the state.

Advertising and promotions

Indiana ASSIST has been active in creating and promoting exciting, positive health messages on radio, television, in newspapers and magazines and on billboards and bus placards. Recent activities include efforts to restrict advertising and promotion of tobacco products. While electronic advertising of tobacco products is prohibited, tobacco companies spend millions of dollars in promotions and sponsorships. The events promoted and sponsored by the tobacco companies often receive considerable media coverage, allowing the tobacco logo, image and name to be broadcast, circumventing the electronic media advertising ban. In Indiana, tobacco company promotions and sponsorships are visible and powerful influences at major sporting events, concerts, fairs and festivals.

Youth are especially susceptible to the images promoted in tobacco advertising. Tobacco advertisements suggest product use can be correlated to success, popularity and a positive appearance. Efforts to reduce the appeal of tobacco advertising to youth are especially timely in light of the proposal from President Clinton and the Food and Drug Administration to regulate tobacco advertising and promotions.

Taxes

Raising the price of tobacco continues to be the most effective means of reducing tobacco use, especially among youth. For every 10% increase in price, approximately 4% of adults and up to 12% of youth will quit using tobacco. Indiana's excise tax on tobacco is lowest among states within the Great Lakes region. An intensive educational, public relations, marketing and advocacy campaign is needed in Indiana to mobilize the majority of voting-age citizens to encourage their legislators to sponsor and/or support an increased tobacco tax.

The role of health care providers in ASSIST

Health care professionals are influential leaders within their communities. Indiana physicians and other health professionals are actively involved with ASSIST in a variety of roles. Staff and member physicians of the Indiana State Medical Association (ISMA) have contributed greatly to ASSIST policy efforts. They have provided testimony on pending legislation during the Indiana General Assembly. Locally, they have testified in support of tobacco control ordinances or opposed measures that would expose Hoosiers to the risks of tobacco use. The ISMA House of Delegates has adopted resolutions to restrict youth access to tobacco and to encourage stronger tobacco control legislation. In addition, the ISMA House of delegates sent their resolution to the American Medical Association's House of Delegates for adoption.

Indiana ASSIST and family physicians have joined forces to educate young school children on the dangers of tobacco use, the deception of tobacco advertising, and the benefits of smoke-free environments. Through the "Tar Wars" program, physicians provide educational programs to fourth and fifth grade students in Indiana. Afterwards, students are encouraged to submit an effective tobacco prevention poster in a local poster contest. Winners at the local level were submitted to a statewide contest. The state's winning poster was submitted to

the national contest. The artist and chaperon attended the national "Tar Wars" poster contest.

Physicians and other health professionals are invaluable resources to ASSIST coalitions. They serve as technical experts, conduct media interviews to promote tobacco prevention and control messages, provide testimony and serve as highly visible advocates for tobacco prevention and control activities.

Indiana ASSIST coalitions offer resources for their communities. Coalition members, especially health care professionals, are often called upon to conduct educational programs within the community. Training, technical assistance, educational materials and speakers bureaus are a few of the tobacco prevention and control resources available to physicians, schools, community groups, work sites, policy makers and citizens.

Indiana ASSIST coalition members have realized the effect of their efforts. Coalition members were instrumental in the defeat of legislation promoted by the tobacco industry. Staff and coalition members experienced firsthand the power of grassroots initiatives in the democratic process.

As the Indiana ASSIST Project enters its fifth year, staff and coalition members have renewed their commitment for working through schools, community groups, work sites and the health care setting to promote tobacco-free, healthy lifestyles. Plans are in place to increase coalition membership, to expand beyond those traditionally involved in tobacco control efforts and include all segments of the community. Coalition members are looking to build alliances with key influential individuals and organizational representatives to build support for the ASSIST objectives.

For more information on the Indiana ASSIST Project or to learn how you can become involved at the state or local level, call (317) 383-6259 or (317) 872-4432. ❑

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Tobacco control and the AMA: Health, policy and politics

Thomas P. Houston, M.D.
Chicago

Since 1847, the mission of the American Medical Association (AMA) has been "to promote the science and art of medicine and the betterment of public health." In the context of public health, tobacco use prevention and control has become an increasingly important part of the AMA's strategy. This article briefly describes a history of the AMA in tobacco control and suggests some ways that state medical societies might become more involved.

The first mention of tobacco in the *Digest of Official Actions of the AMA House of Delegates* comes in a 1960 resolution for the AMA to "clarify its position regarding the harmful effects of tobacco ... and take a lead position in an educational campaign aimed at the youth of the United States." During the early 1960s, the Council on Drugs was asked to study the harmful effects of tobacco. Because the study was in progress, the House deferred statements on the health hazards of tobacco use, pending the report's conclusions. A 1963 announcement from the board of trustees called for more documentation of the health risks involved in tobacco use, noting that the surgeon general's committee was considering the question. In 1965, however, following release of the landmark report from the surgeon general, the AMA did not adopt a proposed resolution endorsing the report, having made a statement in 1964 that "recognize[d] a significant relationship between cigarette smoking and the incidence of lung cancer ... and that cigarette smoking is a serious health hazard." Unlike the surgeon general's committee, the AMA did not state that a causal effect between smoking and lung cancer was present.

In January 1964, the AMA Education and Research Foundation (AMA-ERF) entered into a five-year agreement with six tobacco companies to conduct a comprehensive program of research on tobacco and health. The Council on Drugs study was halted because of this agreement, as well as the belief that the surgeon general's report would duplicate any council findings. The AMA-ERF received $10 million for the project and appointed a scientific research committee to help oversee the project, several members of which were also on the surgeon general's committee. Between 1964 and 1975, 844 researchers in the United States and 13 foreign countries produced 795 publications on the relationship between tobacco and health. Generally speaking, the findings and conclusions of the research concurred with the work of the surgeon general's committees and reports – that tobacco use is causally related to a host of diseases resulting in premature morbidity and death.

Until the early 1980s, AMA resolutions only called upon physicians to educate the public about tobacco and health and to "take a strong stand against tobacco" without very many specifics. In 1970, the AMA began to be more directive, calling for an end to federal tobacco subsidies and, for the first time, for a ban on all tobacco advertising. Only 12 resolutions on tobacco passed the House between 1970 and 1979.

In the early 1980s, the picture changed dramatically, with the action of a small band of delegates to the House from the student and resident sections. The volume of resolutions increased markedly; the actions called for were much more pointed and action oriented; and the AMA itself began to act in ways that supported tobacco control principles, such as divesting its tobacco stock holdings and publicly calling for a total ban on tobacco advertising.

Currently, more than 140 resolutions have been passed by the House of Delegates on tobacco issues, covering a wide spectrum in tobacco control and ranging from protection of the nonsmoking majority from the hazards of indoor tobacco smoke pollution to youth access issues and international trade. The AMA supports a $2 increase in the federal excise tax on cigarettes and called in 1989 for FDA regulatory authority over tobacco products. The AMA has officially labeled nicotine an addictive drug and issued *Guidelines for the Diagnosis and Treatment of Nicotine Dependence* in 1994. It has initiated a variety of activities to educate physicians and the public about tobacco and health, including administering several grants from the Robert Wood Johnson Foundation on tobacco policy intervention.

The *Journal of the American Medical Association* (JAMA) emerged during this period to become the leading scientific journal dealing with tobacco and

health, with several tobacco "theme" issues since 1980. The July 19, 1995, issue of *JAMA* was devoted to articles on tobacco industry documents that, for the first time in a peer-reviewed journal, showed the industry "through a keyhole" regarding what one company knew about nicotine, tobacco and cancer; how it conducted research; and how it used its attorneys to hide the evidence of its misdeeds. The entire board of trustees signed a very strongly worded editorial in this historic theme issue, with an unequivocal statement of the AMA's position on tobacco.[1]

An example of this new kind of involvement in tobacco control comes in tobacco litigation. In 1993, the AMA wrote legal briefs in support of the plaintiff in the *Cipollone* case that came before the U.S. Supreme Court, a tobacco products liability suit brought by the estate of a deceased smoker. More recently, the AMA has announced its willingness to support lawsuits brought by states against the industry to recover Medicaid costs the state has paid over the years. Currently, Mississippi, Minnesota, Florida, West Virginia and Maryland have filed or announced such suits.

State medical society involvement

The AMA recognizes that success in tobacco control is more likely to occur at the state and local level, especially considering the powerful influence of the tobacco industry in Washington. The House of Delegates not only accepts policy recommendations from state medical societies, but has passed several statements calling for action on their part. State societies are encouraged to:

- Strengthen state and local laws that govern lobbying influences by the tobacco industry, and be vigilant for tobacco industry influence when local tobacco control ordinances are challenged (AMA Policy 490.938);
- Develop lists of pharmacies that do not sell tobacco products, distributing this to members; publicly commend pharmacies that do not sell tobacco products and encourage patients to patronize them (490.946);
- Advise municipalities and school districts against use of "educational" materials from the tobacco industry (either for retail merchants or for schools) (490.945);
- Attempt to raise the state excise tax on tobacco products (490.948);
- Support legislation banning smoking in public places, including businesses, restaurants, schools, athletic stadiums, public transportation and health care facilities (505.974, and other related policies);
- Divest any and all tobacco stock holdings (490.950);
- Develop, along with county medical societies, strong anti-tobacco campaigns and actively reach out to the voluntary health associations to participate in tobacco control coalitions (490.953); and
- Sponsor efforts that will help physicians and medical students more effectively counsel patients to stop smoking (490.963).

In general, four key areas exist for policy development in tobacco control: curbing youth access to tobacco, protecting the public from the hazards imposed by environmental tobacco smoke, increasing excise taxes and restricting tobacco industry advertising and promotion. In some states, medical societies have created tobacco control subcommittees as an official part of the society structure (North Carolina, Texas and Indiana) to propose policy and develop action plans designed to impact tobacco use. In coordination with the lobbying and educational activities traditionally taken on by most state societies, such efforts can be very productive in targeting tobacco. Just as in this issue of *Indiana Medicine*, other states have crafted tobacco control "theme" issues (North Carolina, January 1995; Maryland, October 1995; and Florida, February 1996).

Involvement with other groups such as the local chapters of the American Cancer Society, the American Lung Association, the American Heart Association, hospital associations, dental societies and state chapters of medical specialty societies is also very fruitful. Most states have a tobacco control coalition that has these groups, among others, as members. Active participation of the medical society at both state and county levels makes it much more likely that these coalitions will succeed in their plans. In several states, the medical society has assumed the coalition leadership role.

Finally, a word about action and activism. For too long, organized medicine has been accused of armchair activism – of only being involved in traditional activities that are safe, comfortable and avoid risk. The recent revela-

tions about tobacco company deceit in *JAMA* paint a picture of a rogue industry that demands a response from organized medicine at all levels. It is too little, too late to be content with generic smoking cessation advice to our patients or sponsoring a health booth at the county fair.

We must take our message outside the walls of the office and hospital, to confront the industry and its apologists directly. Physicians in Kansas and Illinois, for example, have shown their mettle by picketing tobacco industry-sponsored sports events. We can also act by making tobacco a campaign issue at a town meeting during the next Congressional elections or writing letters to the editor.[2] It only takes one determined physician to counter the misinformation spread by tobacco industry hired guns at a city council meeting on clean indoor air regulations. A county medical society can make youth access to tobacco a special priority, and shepherd a local ordinance through the system.

The potential to make a difference is present if we take the time to get involved.[3,4] Organized medicine and its members can play a key role in the tobacco wars. Together, the AMA and its partners in the states have an opportunity to make a difference, working to ease the human and economic toll taken by tobacco. As the Massachusetts tobacco control program motto states it so well, "It's time we made smoking history." ❑

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Trends of public opinion on tobacco use and public policy

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Abstract

This study examined the trends and stability of public opinion related to tobacco use and raising tobacco taxes in Indiana. Using a structured questionnaire, a sample of 800 households was randomly selected, and the adults were interviewed by telephone in 1989, 1990 and 1992 by the Indiana University Center for Survey Research. The data were subjected to descriptive and chi-square statistical procedures.

The results of the study indicate that more than 80% agreed that secondhand smoke is a health threat, and the opinions remained practically stable for the duration of the study. Most respondents agreed that public places should be required to have nonsmoking areas. Further, most people favored a tax increase on cigarettes, and there was an upward trend toward more people favoring a tax increase in recent years. It was concluded that the tax on tobacco should be increased for public health reasons. ❑

According to the U.S. Department of Health and Human Services, the use of tobacco accounts for approximately 419,000 deaths each year among American people. It contributes substantially to deaths from cancer, cardiovascular disease, lung disease, low birth weight, and other problems including fires and burns.[1,2] Thus, cigarette smoking is known as the single most preventable cause of death.

Unfortunately, smoking cigarettes is both psychologically and physiologically addictive. Consequently, most regular adult smokers started smoking by the time they graduated from high school. Thus far, we have learned that prevention through health promotion and education and empowerment of individuals are important weapons to fight against major health risk factors such as tobacco. Effective public education requires that it be complemented with legislative and advocacy efforts.

With skyrocketing health care costs and recent recognition of disease prevention and health promotion through education as an integral part of cost containment, it is critical for leaders in the health profession to seize the opportunities and further promote health education. Often legislative and public policy efforts are influenced by public opinion. Stable public opinion is an important reassurance to legislators for passing appropriate bills on tobacco use and related public policies.

Tobacco industries annually spend billions of dollars to promote tobacco use and to influence public opinion. They also lobby legislators and public officials extensively in order to block anti-smoking bills or to support their desirable bills. To combat tobacco industries' promotional activities, public health professionals often lack the resources needed to develop quality educational intervention and lobbying strategies.

Despite this imbalance of resources, public health education has made significant progress in reducing smoking prevalence rates in the past three decades.[1] The smoking rate has dropped from about 45% in 1954 to less than 30% in the late 1980s.[3] There are more smoke-free public buildings and restaurants than ever before. Local communities are better informed about the consequences of tobacco use. Yet, extensive, coordinated and comprehensive efforts are required to impact a legislative agenda.

As expected in a democratic society, public opinion plays a major role in passing or not passing bills.[4,5] Stability of public opinion is an important reassurance to legislators for passing appropriate bills related to tobacco use and its taxes. This study examined the stability of public opinion related to tobacco use and raising tobacco taxes in Indiana.

Methodology

The American Lung Association of Indiana provided two grants to sponsor, in part, this project. A structured questionnaire was

developed, field tested and revised for the data collection procedures. A sample of 800 households was randomly selected, and the adults were telephone interviewed in 1990 and 1992 by the Indiana University Center for Survey Research. Additionally, a comparable study with a few similar questions was conducted by the Indiana State Board of Health in 1989. Thus, the 1989 data were obtained, pooled and compared with 1990 and 1992 data for the purpose of revealing public opinion trends on tobacco use and its related taxes. The three sets of data were subjected to descriptive and chi-square statistical procedures.

Findings

An examination of the demographic variables of the three sets of data provided evidence that the samples reasonably well-represented the Indiana adult population by gender, age and socioeconomic composition. The subjects' ages varied from 18 to older than 65 years, and most were between 30 to 44 years of age. Almost equal numbers of male and female adults participated in the study.

The results have a margin of error of 4% at the 95% confidence interval. Smoking prevalence for the four-year period remained relatively stable, varying from 27% to 29%. The difference is not significant and probably due to random error. Consequently, the percentage of former smokers remained unchanged (about 24%) and the never-smoked group stayed around 48%.

Average daily consumption of cigarettes by current smokers was interesting. The data revealed a marginal upward trend of daily consumption. In other words, the trend of current smokers was to smoke slightly more cigarettes per day than in previous years. This may indicate that the public health professionals have not been highly effective in reducing daily use of cigarettes among smokers.

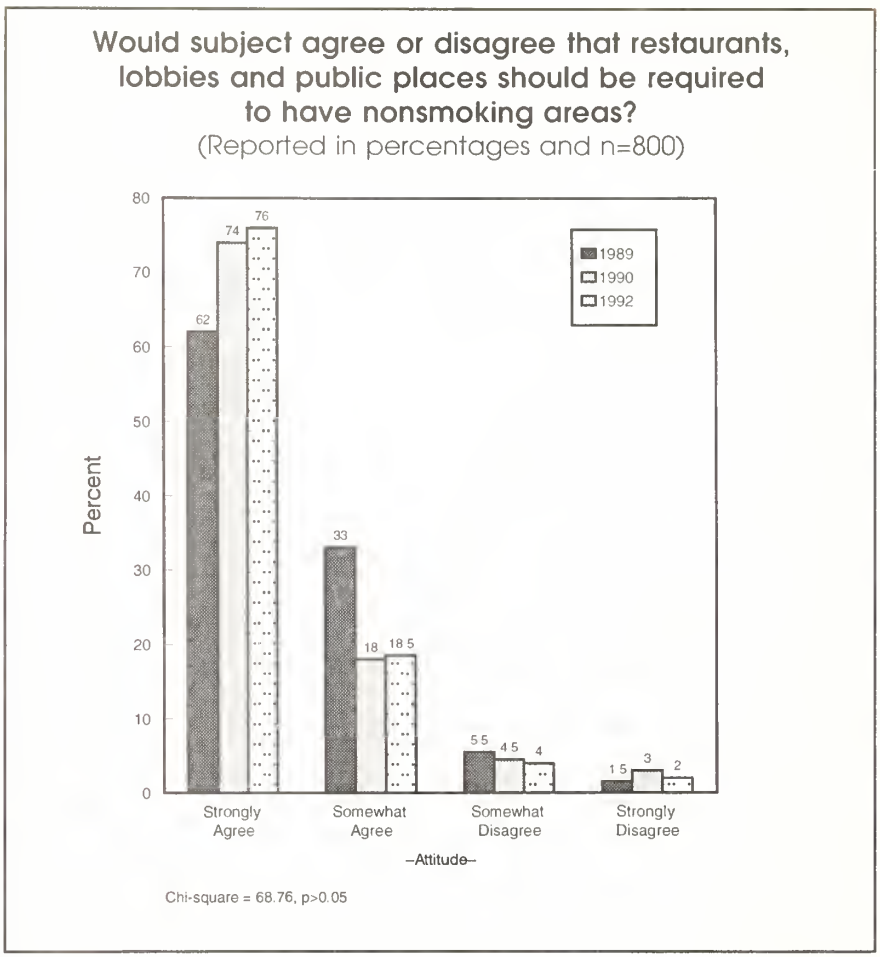

Figure 1

The subjects were asked if they agreed or disagreed that being exposed to secondhand smoke from other people's cigarettes is a health threat. The results of the study indicate that more than 80% agreed that secondhand smoke is a health threat, and the opinions remained practically unchanged for the duration of the study. The subjects were also asked if they agreed that restaurants, lobbies and other public places should be required to have nonsmoking areas. As *Figure 1* shows, most respondents agreed that public places should be required to have nonsmoking areas. Further, more people strongly agreed with this requirement in recent years as compared to the previous years. This positive trend is statistically significant ($p<.01$).

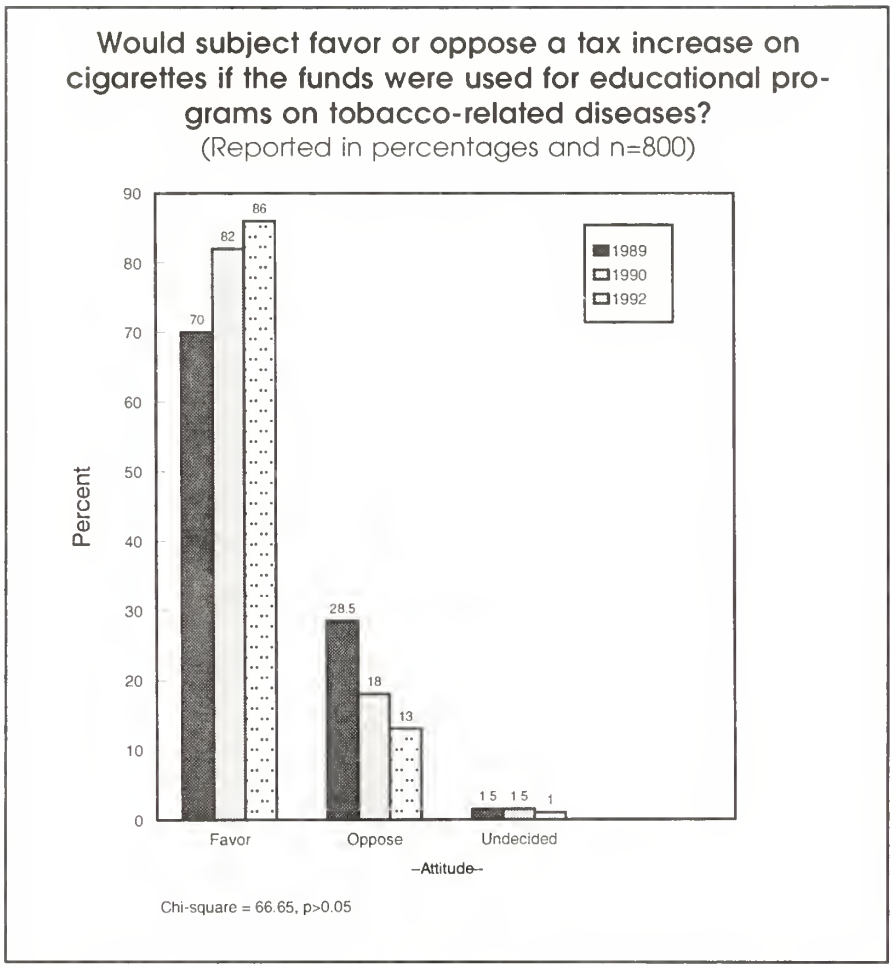

Figure 2

The subjects were asked if they would favor or oppose a tax increase on cigarettes if the funds were used for educational programs on tobacco-related diseases. As *Figure 2* shows, most people favored a tax increase on cigarettes during the four-year period. Further, there is an upward trend toward more people favoring a tax increase in recent years, and this positive trend is statistically significant ($p<.01$).

The subjects were also asked if they would favor or oppose a tax increase on cigarettes if the funds were used for research on tobacco-related diseases. The results were almost similar to *Figure 2*. Most respondents (more than 70%) favored a tax increase on cigarettes if the funds were used for research on tobacco-related diseases. Of those who favor a tax increase, most (more than 60%) consistently supported a tax increase of six cents or more per pack of cigarettes.

The respondents were also asked if they would favor or oppose legislation that would fund educational programs to help prevent young people from starting to smoke. The data for this question were collected only in 1990 and 1992. For the three-year period, nearly 90% of the respondents favor such legislation. Those individuals were asked a follow-up question as to how they would prefer the government pay for such programs.

As *Figure 3* shows, about 80% of the respondents indicated cut spending, about 10% indicated raise taxes, and less than 5% indicated borrow money.

Discussion and conclusion

The findings of this longitudinal study revealed that there was overall strong support for public policy and legislative effort for restricting smoking in public places for health and safety reasons. The public has become increasingly aware of the dangers of secondhand cigarette smoke. Further, most people in Indiana favored a tax increase on cigarettes if the funds were used for education and research related to tobacco use and tobacco-related diseases. The public opinion related to these topics was at least stable or tended to be more favorable toward restricting tobacco in recent years. This may indicate that despite intensified promotional campaigning by the tobacco industries, public health education slowly but surely has positively impacted public opinion on tobacco use and its taxes.

The results of this study compared favorably to the recent national Gallup Poll reported in 1994 Public Health Forum.[3] About 30% of the national sample favored a ban on smoking in public places,

and more than 60% favored setting aside areas for smokers. Also, an overall 78% thought secondhand smoke was very or somewhat harmful to adults. The same Gallup report revealed that the percentage of current smokers has dropped from 40%, to the lowest ever of about 25% in 1995. The following recommendations are offered to public health professionals and legislators:

1. A similar public opinion survey should be conducted periodically, and the results publicized in state journals so public health professionals can develop effective intervention strategies.
2. Recognizing the serious consequences of secondhand smoke, all policy makers should ban or severely restrict smoking in all public places.
3. It is estimated that every pack of cigarettes smoked costs every taxpayer $2 in medical care and lost productivity. Thus, legislators should raise the tax on tobacco for three reasons. First, increased cost of cigarettes will more likely discourage nonsmokers from starting to smoke. Second, the current smokers will more likely reduce their daily consumption. Finally, the smokers will pay their share for the medical costs and lost productivity to the public general fund. ❑

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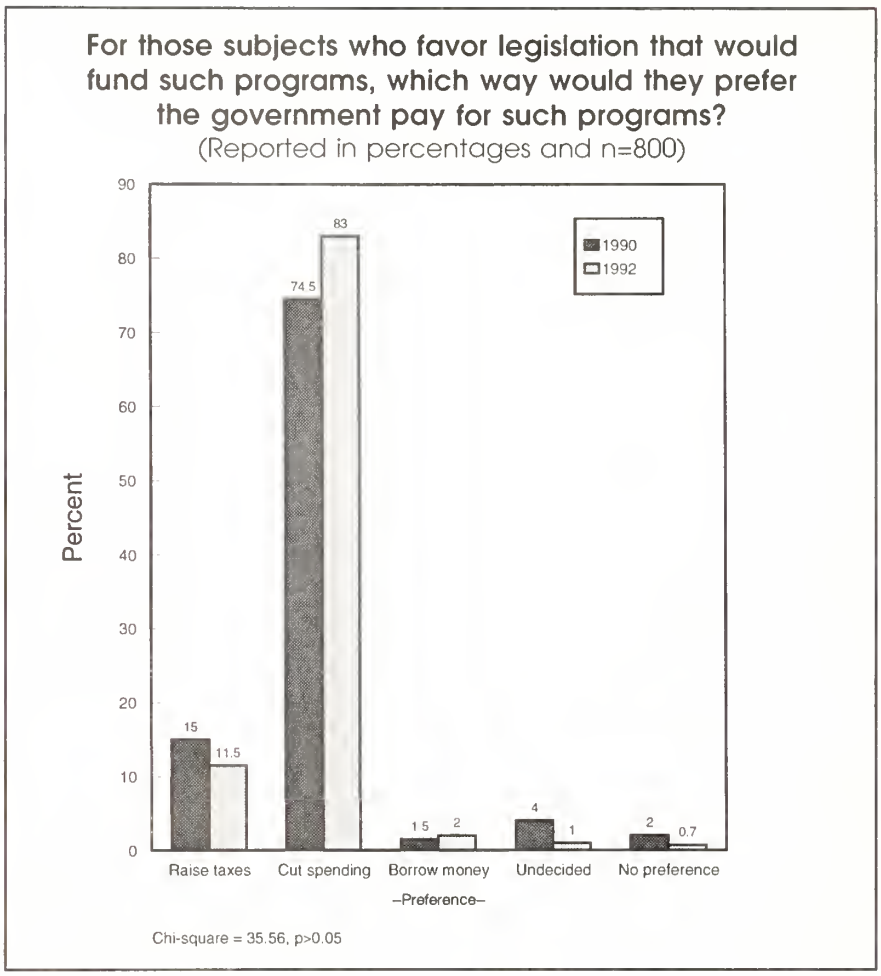

Figure 3

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ISMA creates tobacco control task force

Jerome Melchior, M.D.
ISMA president

On Oct. 20, 1995, the ISMA House of Delegates Reference Committee on Community Health Issues adopted Resolution 95-13 that called for the creation of a Tobacco Control Task Force (TCTF). ISMA President Jerome Melchior, M.D., appointed members to the task force and charged them to address the following areas in Resolution 95-13.

1. Promote public policy that will especially prevent youth access to tobacco;
2. Support smoke-free indoor air legislation and regulation at local, state and national levels;
3. Enhance physician education and awareness, especially training of medical students and residents in tobacco control;
4. Provide training for practicing physicians to be able to teach smoke cessation skills to others;
5. Publicize the importance of tobacco control through articles for *Indiana Medicine* and *ISMA Reports;*
6. Collaborate with other organizations such as the Indiana State Department of Health, Indiana University School of Medicine, and Project ASSIST (American Stop Smoking Intervention Study); and
7. Contribute to the ISMA policy on tobacco control by sponsoring or supporting resolutions regarding tobacco control.

The ISMA TCTF met for the first time in early 1996. Task force members are Stephen Jay, M.D., chairman; Robert Walker, M.D., Bloomington; Dennis Stone, M.D., Columbus; Nancy Griffith, M.D., New Castle; Nicki Turner, M.D., Muncie; Gerald Wehr, M.D., Lafayette; and William Mohr, M.D., Kokomo. It will develop a mission and select priority goals. In view of the magnitude of tobacco use in Indiana, the task force will have an enormous challenge before it. But, through the coordinated efforts of the ISMA and other concerned organizations, progress in tobacco control will be made. The active interest and involvement in the TCTF work among Hoosier physicians will be key to its success. We need to hear from those who want to help. ❑

Tobacco use by Indiana children and adolescents

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Abstract

Data from a five-year, longitudinal survey of cigarette smoking and smokeless tobacco use by Indiana children and adolescents are presented. A four-page, self-contained questionnaire was used to collect anonymous information from more than 240,000 students in grades six through 12. Indiana students reported prevalence levels 20% to 50% higher than levels reported in comparable national surveys. Perceived risk of physical or psychological harm was the single best statistical predictor of whether or not a student would choose to use tobacco. Tobacco use was statistically linked to increased use of illicit drugs. Physicians can play a powerful role in influencing a patient's perception of the risks associated with cigarette smoking. ❑

Tobacco use by children and adolescents continues to be a major health crisis, despite more than 30 years of publicity about the health consequences of cigarette smoking.[1-4] While there has been a significant decline in overall smoking rates since the publication of the first surgeon general's report on smoking and health in 1964,[1-4] the use of tobacco by children and adolescents leveled off in the early 1980's and is now increasing.[5-6] More than 1,000,000 Americans begin smoking each year (3,000 per day), and nearly all of these new smokers are under the age of 18.[2-4] More seriously, children and adolescents in Indiana smoke at rates 20% to 50% higher than do children and adolescents nationally.[7]

As if the health consequences of tobacco use were not serious enough by themselves, tobacco use plays an important role in the decision to use other drugs. Youthful cigarette smokers are three to five times more likely to abuse alcohol and 10 to 90 times more likely to abuse other drugs as are nonsmokers.[2,8-10]

This article describes the findings of a five-year longitudinal study of tobacco use by Indiana children and adolescents in grades six through 12.

Method

Subjects – Data were derived from annual surveys of drug use by students in grades 6 through 12, coordinated by the Indiana Prevention Resource Center at Indiana University.[7] Since 1991, more than 230,000 students from 745 schools in 209 school corporations have participated in the annual surveys. In 1995, data were collected in 85 separate community or school corporation surveys conducted in 250 schools throughout Indiana. These surveys yielded 63,631 usable questionnaires, from 66,020 students present on the day of the survey. The participation rate was 96.4% (641 refused to participate or turned in blank forms, 1,393 forms were unusable, and 355 were rejected due to error checking protocols).

The massive sample size is required to provide large enough local samples to generate usable data for local purposes. In the 1991 survey, 23,319 usable surveys were collected; in 1992, 20,629 usable surveys were collected. In 1993 the number of schools participating increased dramatically, resulting in 90,586 usable surveys being collected, and in 1994, 81,732 usable surveys were collected. While identical populations were not sampled each year, the populations are comparable, were selected for geographic and community-size balance in an identical manner, and should produce comparable data.

Schools are selected in a three-stage purposive stratified sampling process to yield a sample that is representative of the state as a whole and is stratified by grade and purposively selected taking into account geographic balance, ethnic diversity and community size. Schools and communities are purposively selected to assure proportional representation from the various parts of the state, using 10 planning regions established by the Governor's Commission for a Drug-Free Indiana, and to assure adequate sampling of minority populations and of students from rural areas. Schools then are assigned a quota designed to yield appropriate numbers of subjects in each grade. Intact classes are randomly selected as sampling

Table 1

Prevalence of tobacco use by Indiana children and adolescents
Grades six to 12, spring 1995
Percent of students in each grade reporting use

	Number	Cigarettes		Smokeless Tobacco	
		Percent	95% C.I. *	Percent	95% C.I. *
Sixth Graders	9,958				
Lifetime use		27.6	(26.5-28.7)	7.7	(7.2-8.2)
Annual use		18.3	(17.6-19.0)	5.8	(5.3-6.3)
Monthly use		9.3	(8.8-9.8)	3.3	(2.8-3.8)
Any daily use		4.0	(3.6-4.4)	< 1.0	< 1.0
Daily use of 1/2 pack or more		1.9	(1.6-2.2)		
Seventh Graders	7,753				
Lifetime use		39.8	(38.7-40.9)	14.6	(14.0-15.2)
Annual use		29.8	(27.9-30.7)	11.9	(11.3-12.5)
Monthly use		17.7	(17.1-18.3)	7.1	(6.6-7.6)
Any daily use		8.8	(8.3-9.3)	1.1	(0.8-1.4)
Daily use of 1/2 pack or more		4.4	(4.0-4.8)		
Eighth Graders	12,868				
Lifetime use		52.4	(51.0-53.8)	19.2	(18.6-19.8)
Annual use		41.4	(40.6-42.0)	15.4	(14.9-15.9)
Monthly use		26.3	(25.5-27.1)	9.3	(8.8-9.8)
Any daily use		14.9	(14.4-15.4)	2.1	(1.7-2.5)
Daily use of 1/2 pack or more		8.4	(7.9-8.9)		
Ninth Graders	7,437				
Lifetime use		58.7	(57.4-60.0)	26.2	(25.5-26.9)
Annual use		46.2	(41.4-48.0)	20.8	(20.2-21.4)
Monthly use		30.8	(30.2-31.4)	13.2	(12.7-13.7)
Any daily use		18.4	(17.8-19.0)	4.1	(3.7-4.5)
Daily use of 1/2 pack or more		11.2	(10.6-11.8)		
10th Graders	11,181				
Lifetime use		61.8	(60.6-63.0)	28.7	(28.0-29.4)
Annual use		48.9	(48.0-50.8)	22.2	(21.6-22.8)
Monthly use		34.4	(33.6-35.2)	13.8	(13.2-14.4)
Any daily use		22.4	(21.9-22.9)	5.0	(4.6-5.4)
Daily use of 1/2 pack or more		14.6	(14.1-15.1)		
11th Graders	6,280				
Lifetime use		66.5	(65.2-67.8)	32.2	(31.2-33.2)
Annual use		53.3	(52.3-54.3)	23.9	(23.1-24.7)
Monthly use		39.3	(38.3-40.3)	15.4	(14.8-16.0)
Any daily use		26.0	(25.0-27.0)	6.3	(5.7-6.9)
Daily use of 1/2 pack or more		17.2	(16.4-18.0)		
12th Graders	8,554				
Lifetime use		67.9	(66.9-68.9)	35.8	(34.9-36.7)
Annual use		54.5	(53.5-55.5)	25.9	(25.1-26.7)
Monthly use		40.6	(38.8-41.4)	16.5	(16.0-17.0)
Any daily use		27.6	(26.9-28.4)	7.6	(7.1-8.1)
Daily use of 1/2 pack or more		18.9	(18.4-19.4)		

* 95% confidence interval

Table 2

Trends in tobacco use by Indiana children and adolescents - 1991 to 1995
Percent of students in each grade reporting use

	1991	1992	1993	1994	1995	Change 94/95
Cigarette Smoking						
Sixth Grade						
Lifetime use	32.2	33.2	29.2	28.8	27.6	-1.1ns
Annual use	20.9	22.6	19.0	19.5	18.3	-1.2ns
Monthly use	10.7	12.9	8.5	10.0	9.3	-0.7ns
Any daily use	3.9	4.8	3.4	4.3	4.0	-0.3ns
Daily use of 1/2 pack or more	2.1	3.0	1.5	2.0	1.9	-0.1ns
Seventh Grade						
Lifetime use	43.0	42.7	38.6	40.1	39.8	-0.3ns
Annual use	31.7	31.5	28.4	29.7	29.8	+0.1ns
Monthly use	16.8	16.9	14.5	16.9	17.7	+0.8ns
Any daily use	8.6	8.3	7.3	8.6	8.8	+0.2ns
Daily use of 1/2 pack or more	4.8	4.7	3.9	4.4	4.5	+0.1ns
Eighth Grade						
Lifetime use	52.1	55.0	50.0	51.3	52.4	+1.1ns
Annual use	39.1	41.8	37.9	39.6	41.4	+1.8s
Monthly use	22.0	24.8	21.1	24.2	26.3	+2.1s
Any daily use	13.2	13.7	11.8	13.8	14.9	+0.9ns
Daily use of 1/2 pack or more	7.7	9.4	6.7	7.2	8.4	+1.2s
Ninth Grade						
Lifetime use	54.2	58.2	56.5	57.4	58.7	+1.3ns
Annual use	39.4	45.9	43.6	45.5	46.2	+0.7ns
Monthly use	22.6	28.4	26.2	29.4	30.8	+1.4ns
Any daily use	13.6	17.2	16.0	18.3	18.4	+0.1ns
Daily use of 1/2 pack or more	9.0	11.4	9.9	11.7	11.2	-0.5ns
10th Grade						
Lifetime use	61.6	62.6	60.8	61.5	61.8	+0.3ns
Annual use	47.8	48.7	46.8	48.0	48.9	+0.9ns
Monthly use	31.0	31.3	30.4	33.0	34.4	+1.4ns
Any daily use	18.7	20.1	19.0	21.9	22.4	+0.5ns
Daily use of 1/2 pack or more	12.2	13.4	12.3	14.4	14.6	+0.2ns
11th Grade						
Lifetime use	63.0	65.5	64.7	64.5	66.5	+2.0s
Annual use	48.3	51.3	51.0	50.5	53.3	+2.8s
Monthly use	29.9	34.9	33.7	34.4	39.3	+4.9s
Any daily use	19.3	22.6	22.0	22.8	26.0	+3.2s
Daily use of 1/2 pack or more	13.8	15.7	15.01	15.3	17.2	+1.9s
12th Grade						
Lifetime use	69.1	69.4	66.4	65.6	67.9	+2.3s
Annual use	69.1	54.3	52.2	51.8	54.5	+2.7s
Monthly use	34.6	36.2	35.6	37.3	40.6	+3.3s
Any daily use	22.7	22.8	23.2	25.1	27.6	+2.5s
Daily use of 1/2 pack or more	16.3	16.0	16.0	17.9	18.9	+1.0s

ns = not significant at $p < .05$ level
s = significant at $p < .05$ level

Table 2 (continued)

Trends in tobacco use by Indiana children and adolescents - 1991 to 1995
Percent of students in each grade reporting use

	1991	1992	1993	1994	1995	Change 94/95
Smokeless Tobacco						
Sixth Grade						
Lifetime use	9.2	13.0	8.5	9.0	7.7	-1.3s
Annual use	6.5	10.2	6.4	6.8	5.8	-1.0s
Monthly use	4.1	5.9	3.5	4.0	3.3	-0.7s
Any daily use	<1	<1	<1	<1	<1	
Seventh Grade						
Lifetime use	17.4	16.2	13.9	14.9	14.6	-0.3ns
Annual use	14.4	13.2	10.9	11.7	11.9	+0.2ns
Monthly use	9.7	7.9	6.7	7.5	7.1	-0.4ns
Any daily use	2.6	5.1	1.2	1.7	1.1	-0.6ns
Eighth Grade						
Lifetime use	24.8	26.6	18.9	20.1	19.2	-0.9ns
Annual use	20.1	22.8	14.9	16.5	15.4	-1.1ns
Monthly use	13.7	15.6	9.0	10.6	9.3	-1.3s
Any daily use	4.6	5.1	2.3	2.6	2.1	-0.5ns
Ninth Grade						
Lifetime use	28.0	28.5	24.3	25.8	26.2	+0.4ns
Annual use	23.3	25.1	19.2	20.8	20.8	+0.0ns
Monthly use	14.4	16.1	12.2	13.3	13.2	-0.1ns
Any daily use	5.0	5.4	3.8	4.2	4.1	-0.1ns
10th Grade						
Lifetime use	35.5	32.0	27.9	28.0	28.7	+0.7ns
Annual use	27.3	27.1	21.6	21.8	22.2	+0.4ns
Monthly use	18.1	18.2	13.2	13.6	13.8	+0.2ns
Any daily use	7.6	7.9	4.7	5 .2	5 .0	-0.2ns
11th Grade						
Lifetime use	35.1	37.3	31.9	31.0	32.2	+1.2ns
Annual use	26.5	28.1	23.5	23.1	23.9	+0.8ns
Monthly use	16.9	19.5	14.4	14.6	15.4	+0.8ns
Any daily use	6.8	9.3	5.8	6.4	6.3	-0.1ns
12th Grade						
Lifetime use	38.0	39.5	34.0	33.9	35.8	+1.9s
Annual use	38.0	20.8	23.8	24.6	25.9	+1.3ns
Monthly use	19.4	21.7	15.4	15.5	16.5	+1.0ns
Any daily use	9.6	10.4	6.9	7.0	7.6	+0.6ns

ns = not significant at p <.05 level
s = significant at p <.05 level

clusters. The sample reasonably well represents the sociodemographic makeup of the state, based upon the 1990 decennial Census of Population and Housing. The 1995 sample consisted of appropriate subsamples from each of the 10 planning regions. The number of African-American respondents and Hispanic respondents also well represented their share of the state's population.

A more detailed description of the sampling procedure may be found on the Indiana Prevention Resource Center's World Wide Web site at URL: http://www.drugs.indiana.edu/statistics. Although not true random sampling, the sampling procedure used in this study is comparable to that used in the National High School Survey ("Monitoring the Future" study),[6] and its massive size (65,000+ participants) and representativeness make it a valuable and reliable sample of the population.

The anonymous written questionnaire was selected for reasons of data quality, cost and time efficiency and effectiveness and prior experience. Self-administered written questionnaires "were found to produce more complete reporting of drug use ... [particularly] for reporting of more recent use of 'harder' drugs."[11] This method is comparatively less expensive than other data collection methods and is feasible with school-aged youth, given the relatively easy access to this population through administration in school settings. With Indiana's relatively strict enforcement of mandatory school attendance laws, more than 98% of the youth population under age 16 may effectively be reached through school-administered surveys. School drop-out is a significant problem after age 16, and these data reflect only those students still in school. Johnston, O'Malley and Bachman[6] describe a protocol that can be used to estimate the total prevalence (including the drop-out population) from data such as these.

Instrumentation – The survey used is a four-page, self-contained questionnaire, designed by the Indiana Prevention Resource Center for use in school settings. All of the questions in the prevalence portion of the questionnaire are comparable to the National High School Survey.[6] The basic portion of each questionnaire is divided into 16 multi-part questions that measure drug use and its correlates. Items were selected to gather data comparable to *Healthy People 2000*[12] standards utilized by the U.S. Public Health Service, so that the resulting data could be used to assess the state's and a community's success at meeting the *Healthy People 2000* target goals.

During development of the survey, the basic questionnaire was reviewed by a panel of experts for content validity, subjected to six months of pilot testing and review by focus groups of school-aged youth and tested for reliability using the test-retest method (correlation coefficient 0.82). A SMOG Index of Readability was calculated to assure readability at the fifth grade level. The survey form is optically scannable, allowing for direct transfer of data from the forms to a computer file, utilizing an NCS Op-Scan 10 reader. The collected data are analyzed using descriptive statistical techniques and multiple regression through SPSS-X routines operating in a VAX/VMS environment. A more detailed description of the instrument development and reliability testing has been published elsewhere.[7,8]

Procedures – Each year, all surveys were conducted during a six-week period in the spring so that the high school data would be comparable to the National High School Survey data. Due to the relatively high rates of new drug experimentation during a particular school year, it is necessary to survey all populations at about the same time, to avoid "maturation bias."

Students complete the questionnaire in private and anonymously deposit it in a collection box or envelope to protect confidentiality. No identifying data are collected, except gender, grade in school and ethnic background, and data are processed by a statistical team that has no direct access to the students, to assure anonymity. Students are given the option of declining to participate or of turning in a blank survey instrument. More than 95% of eligible students complete usable surveys at every site. Data collection is supervised by the classroom teachers or a classroom monitor provided by the local school in each school. The procedures for training data collectors and for error checking of the validity of student responses have been published elsewhere.[7,8]

Results

For the three grades (eighth, 10th and 12th) for which national statistics are available, Indiana students reported significantly higher rates of cigarette smoking

than did students nationally. For example, comparing monthly use in 1994, the latest year for which national data are available, 24.2% of Indiana eighth graders reported smoking at least one cigarette in the month prior to the survey, compared to 18.6% nationally. Indiana tenth graders exceeded the national peers 33% to 25.4%. Indiana twelfth graders exceeded their national peers 37.3% to 31.2%. Comparing daily smoking of a half pack or more, Indiana eighth graders exceeded their national peers 7.2% to 3.6 %; Indiana 10th graders exceeded their peers 14.4% to 7.6%; and Indiana 12th graders exceeded their peers 17.9% to 11.2%.[5,7]

Comparisons of smokeless tobacco use by Indiana students and students nationally yield similar results. When comparing data for 1993 (the latest year for which national smokeless tobacco data are available), Indiana eighth graders exceeded the national rates for smokeless tobacco use in the month prior to the survey 9% to 6.6%; 10th graders exceeded their peers 13.2% to 10.4%; and 12th graders exceeded the national norm 15.4% to 10.7%.[6,7] *Table 1* describes the prevalence of cigarette smoking and smokeless tobacco use by Indiana children and adolescents in 1995, with 95% confidence intervals.

In Indiana, cigarette smoking declined at most grades and for most measures of prevalence from 1991 to 1993. Since 1993, most rates have increased.[7] Nationally, 1992 showed the low point in prevalence rates, with increases in both 1993 and 1994.[5] *Table 2* details the trend in cigarette smoking and smokeless tobacco use by Indiana children and adolescents from 1991 to 1995.

Johnston, O'Malley and Bachman found that perception of risk of physical or psychological harm was the strongest single predictor of whether or not a student would use any drug. Those believing that smoking one or more packs of cigarettes per day would present a "great risk" of physical harm were much less likely to smoke cigarettes than those who saw "no risk" or "slight risk."[6] Indiana students who believed daily smoking presented less than "great risk" were more than six times more likely to smoke than those who believed it presented "great risk" (odds ratio=8.33; 95% CI=8.02-8.64).

Three studies[8-10] previously showed a powerful relationship between cigarette smoking and the use of other drugs. Use of illicit drugs is very rare among children and adolescents who are not regular cigarette smokers. Johnston, Bachman and O'Malley found that high school seniors who smoked were 10 to 30 times more likely to use controlled substances as those who were nonsmokers.[9] Merrill, Fox, Lewis and Pulver found that students aged 12 to 17 were 5.9 times more likely to use marijuana and 19.3 times more likely to use cocaine than were nonsmokers.[10] In Indiana, we previously reported that 68.2% of students who smoked one or more packs of cigarettes daily smoked marijuana, compared with 1.5% of nonsmokers; 23.8% of smoking students used cocaine, compared with 0.3% of nonsmokers.[8]

Reported rates of use of marijuana, cocaine, amphetamines, tranquilizers, inhalants, prescription narcotics, heroin and anabolic steroids among Indiana students in grades six through 12 are greater than the rates reported nationally.[6,7] Almost all of the "excess" use can be explained by Indiana's "excess" rate of cigarette smoking. If the impact excess smoking prevalence is extracted from Indiana's prevalence rates for use of controlled substances, by weighting Indiana students' responses to artificially create the same proportion of smokers and nonsmokers as is found in the national surveys, then Indiana's prevalence rates for controlled substance use do not differ significantly from the national rates at most grades and for most measures of prevalence. Detailed data tables from the Indiana Prevention Resource Center's annual survey of alcohol, tobacco, and other drug use by Indiana children and adolescents may be found on the Indiana Prevention Resource Center's World Wide Web site: URL = http://www.drugs.indiana.edu/statistics/

Discussion and comments

Indiana children and adolescents are more likely to use tobacco than are children and adolescents nationally. This increased prevalence will result in disproportionately high health care costs and increased mortality and morbidity in the future – unless steps are taken soon to reduce youthful tobacco use in Indiana. Beyond the health care costs associated with tobacco use itself, youthful cigarette smoking is statistically linked with massive increases in the risk of using illicit drugs. Cigarettes and smokeless tobacco act as so-called "gateway drugs" that can serve as almost essential precursors to the use of illicit drugs. The

surgeon general has hypothesized that the mechanism by which cigarette smoking impacts upon future use of other drugs is an interaction of multiple and simultaneous mechanisms.[2] While the mechanism may not yet be fully explained, the impact is clear. Indiana's increased rate of youthful cigarette smoking is correlated with increased rates of illicit drug use.

A student's perception of the risk of physical or psychological harm is the best known statistical predictor of use of alcohol, tobacco or other drugs. It is a more powerful influence than peer or social pressures.[6] Physicians can play a powerful role in helping to establish an appropriate level of perceived risks associated with tobacco use. Proactively, they can educate their patients and communities about the health consequences of cigarette smoking and other tobacco use. Reactively, they can counsel youthful patients who smoke about future and present health consequences. Linking a youthful patient's present symptoms of upper respiratory problems, cardiovascular disease, hypertension and other health problems to the patient's cigarette smoking can greatly influence that patient's perception of the risk of smoking cigarettes.

Physicians also may use a youthful patient's cigarette smoking, which should be relatively easy to identify, as a potential identifier of other drug use. The powerful statistical association between youthful cigarette smoking and illicit drug use should serve as a warning for the physician who has physical evidence of a patient's tobacco use. This evidence opens an opportunity to counsel these patients and reveals a need to inquire about illicit drug use. ⌟

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Effects of tobacco use on the health of Indiana citizens

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Abstract

In Indiana, the lung cancer mortality rate is almost equal to the incidence rate. The mortality rate from lung cancer in men is almost four times higher than for any other cancer. In women, the mortality rate is 20% higher than the mortality rate for breast cancer. In Indiana, black men have the highest death and incidence rates, followed by white men, black women, then white women. There are no early warning signs for lung cancer; there is no recommended screening mechanism; there is no uniformly effective treatment. Unlike most cancers, the primary cause of lung cancer is a well known behavioral factor: smoking. Smoking prevalence is higher in Indiana than in the United States for both men and women. ❑

Lung cancer is the most common and most preventable cancer in Indiana.[1] No single measure is known that would have as great an impact on the mortality and morbidity attributable to cancer as a reduction or elimination in the use of tobacco. It is estimated that 85% of all deaths from lung cancer are a consequence of smoking. For men, approximately one of every four deaths is attributable to smoking.[2] While not as great as for men, the incidence of lung cancer in women has climbed at an alarming rate. This increase is clearly attributable to the increase in the prevalence of smoking.[3]

In Indiana, smoking was the primary cause of nearly one in five deaths in 1989.[2] Lung cancer and heart disease account for more than half of the deaths attributed to smoking in Indiana. Lung cancer accounts for the highest number of smoking-related deaths in a single disease category and occurs most often in people over the age of 50 who have long histories of cigarette smoking.[2]

Behavioral Risk Factor Surveillance System

Data are available on the trends of cigarette smoking in adults who reside in Indiana through the Indiana Behavioral Risk Factor Surveillance System (BRFSS). BRFSS is a nationwide random-digit-dial telephone survey of adults that monitors data on the prevalence of cigarette smoking, use of smokeless tobacco and other lifestyle issues. These sample-based data are adjusted to the age-sex-race distribution of the adult population of Indiana.[3]

National BRFSS data are compiled and analyzed by the Centers for Disease Control and Prevention (CDC). According to the 1993 BRFSS Summary Report published by CDC, Indiana ranks eighth in the nation in the prevalence of current smokers.[4] Current smokers are defined as adults who have smoked 100 or more cigarettes and who now smoke on either a regular or irregular basis. During the period of 1990-1994, the prevalence of smoking in both males and females has remained relatively stable. According to BRFSS data, 29% of adult males and 26% of adult females in Indiana currently smoke. Between 1990 and 1994, men reported smoking more than one pack per day at a significantly higher rate than females. Most women who smoked reported smoking one or fewer packs per day.[3]

The prevalence of current smoking does not differ significantly between blacks and whites. The prevalence of smoking generally declined with age in those age 35 and older. At all ages except ages 55-64, women smoke at a lower rate than males. There is a clear age-related decline in the proportion of male smokers who still smoke. This may reflect an increase in successful smoking cessation with increasing age. There also may be a "survivorship" component in that many long-term smokers tend to die at an earlier age than their counterparts who quit smoking. The proportion of women smokers who have quit shows a less dramatic decline with age. This may reflect the increasing number of young female smokers who have not yet made a decision to quit.[3]

Environmental tobacco smoke

Involuntary smoking as a consequence of side-stream smoke or environmental tobacco smoke

(ETS) also has been consistently linked to an increased risk of lung cancer. The determination of a causative role for ETS is based on a variety of evidence including: epidemiologic studies that document an increase of lung cancer risk among nonsmokers with increased ETS exposure; studies that detect elevated levels of cotinine, the major metabolite of nicotine in body fluids of nonsmokers; and laboratory analyses that indicate the components of side-stream smoke are qualitatively similar to mainstream smoke and can act as carcinogens in bioassay studies. Evidence suggests that persons exposed to ETS are subject to a lung cancer relative risk of about 1.3, or 30% greater than those not exposed to ETS.[5] In addition to its independent carcinogenic effect, cigarette smoke can enhance the effect of other carcinogens such as asbestos and radon.[5]

Lung cancer mortality

During the period from 1986 to 1990, Indiana men ranked 14th in the nation, and Indiana women ranked 18th, based on the average annual age-adjusted lung cancer mortality rate.[2] Indiana's rate for men, 84.6 per 100,000 population, is 13% higher than the national rate of 74.9 per 100,000. The lung cancer mortality rate for women in Indiana, 30.8 per 100,000, was 4.4 percent higher than the national rate of 29.5.[1]

Age-specific lung cancer mortality rates in Indiana steadily increase as the population ages. Comparing the periods of 1963-1967 and 1983-1987, total lung cancer mortality rates increased by 98% in Indiana but only 80% in the United States as a whole. This increase in mortality is most likely related to the higher rate of smoking in Indiana compared to the nation[1].

In Indiana, lung cancer is the leading cause of cancer deaths for both men and women. In 1987, lung cancer overtook breast cancer as the primary cause of cancer deaths among women. For the period of 1988 to 1992, lung cancer was responsible for 36.8% of the cancer deaths in men, and 21.8% of the cancer deaths in women.[1]

Lung cancer mortality rates in Indiana have consistently been higher in men than women; male mortality rates have been consistently higher in Indiana than the United States. Between the periods of 1963-1967 and 1983-1987, mortality rates for men increased by 75% in Indiana versus 56% in the United States.[6] The rates for men in Indiana for the most recent five-year period (1988-1992) show a much smaller increase and may indicate that the rapid increase in mortality from lung cancer is slowing for men.[1]

Female lung cancer rates were lower in Indiana than in the

Table

Lung cancer mortality rates* by race and gender Indiana, 1988-1992

GENDER/RACE	YEAR				
	1988	1989	1990	1991	1992
Total	54.2	54.1	55.5	55.7	55.1
Male					
Total	86.0	84.7	86.1	85.5	81.7
White	83.8	82.7	84.1	83.7	79.5
Black	128.5	128.1	122.7	118.0	124.7
Female					
Total	31.4	32.0	33.2	34.6	35.7
White	31.3	31.7	32.5	34.3	35.4
Black	31.9	38.1	46.3	43.1	39.9
White	53.2	52.9	54.3	54.8	53.8
Black	71.6	75.3	77.7	74.3	75.2

* Average annual rates per 100,000 population, age-adjusted to the U.S. 1970 standard population.

Source: Indiana Cancer Control Plan, 1995.

United States as a whole until 1978 when the trend reversed. A 389% increase was observed in Indiana between the periods of 1963-1967 and 1988-1992 compared to a 314% increase in the United States. Lung cancer is now the leading cause of cancer mortality in women in both Indiana and the United States.[6]

Both white and black men in Indiana experience higher lung cancer death rates than the rates for women of the same race. The rates for black men are the highest overall, followed by white men, then black women. White women have the lowest lung cancer rates in the state. There has been little change in the lung cancer death rates for all men between the periods of 1963-1967 and 1988-1992. Conversely, there has been a marked increase in the rates for both white and black women during this same time period. The increase in the lung cancer death rates for women is expected to continue as a consequence of the increased prevalence of smoking among women.[1]

A review of the age-adjusted lung cancer death rates *(Table)* for the years 1988-1992 reveal current data trends. Overall, during the five-year period, the death rates for men have been slowly decreasing, while rates for women have been increasing by approximately 1.1 deaths per 100,000 population per year. For white men, the annual age-adjusted death rate has begun to decrease slightly. In black women, although the lung cancer death rate appears to be decreasing over the last three years, it is expected that this rate will begin to increase due to the prevalence of smoking in younger, black women. For black men, the lung cancer death rate overall appears to be relatively stable, with expected small year-to-year fluctuations in the data.[1]

Lung cancer incidence

Age-specific lung cancer incidence rates in Indiana peak at age 75-79 for men and at age 70-74 for women. The shape of the age-specific rate curve is indicative of a cohort behavioral effect rather than a simple aging effect as seen in most other cancers. Over time, age-specific rates have declined the most in men aged 35-54, and the decline in this age group is responsible for the decline in the overall incidence rate for men. The decline is attributed to a lower prevalence of smoking in men aged 35-54, and as men in this age group get older, the lower incidence rates should reflect this cohort trend in future years.[7]

Nationally, unlike many other cancer sites, lung cancer mortality and incidence rates are quite similar in magnitude. In Indiana, a similar pattern is seen in both incidence and mortality rates by race and gender. Black men have the highest lung cancer incidence (105.5 per 100,000 population) followed by white men (83 per 100,000), black women (40.7 per 100,000), and white women (37.6 per 100,000). The difference between the rates for white and black women is not statistically significant. All other comparisons between race and gender are statistically significant. The similar incidence and mortality patterns reflect the grim prognosis – 13% five-year survival – for victims of lung cancer compared with other cancer sites.[7]

Of all 92 counties in Indiana, only Allen County (42.5 per 100,000) and Elkhart County (31.5 per 100,000) had lung cancer rates that were significantly lower than the state rate of 57.5 per 100,000. Only Marion County (71.4 per 100,000) had a lung cancer rate significantly higher than the state rate. Rates for the remaining counties were well within the expected normal variation from the state rate given the relative size of the counties and the number of cases diagnosed in county residents.[7]

Stage at diagnosis

The Indiana Cancer Registry categorizes newly diagnosed lung cancers into one of four stages; in situ, local, regional or distant. There was no difference in the frequency of tumors diagnosed at the local stage by race or gender. Males were more likely than females to have tumors diagnosed at a regional stage (30% versus 26.2% respectively), although, for both men (39%) and women (41%), more malignancies were diagnosed at the distant stage than any other stage. Almost no lung cancer is diagnosed at the in situ stage, since symptoms are not apparent until the disease has progressed to a more advanced stage. The difference between black women (18.4%) and white women (27%) at the regional stage is also statistically significant as is the percentage of black women diagnosed at the distant stage compared to white women (55.2% vs. 40.5%).

Although survival rates are much better for a local stage diagnosis, mass screening for lung cancer is not yet advocated. Since the primary cause of lung cancer is behavioral, a more efficacious approach would be to effect a significant reduction in the prevalence of smoking.[7]

Histology and treatment

Nationally, squamous cell carci-

noma has predominated among men while both adenocarcinoma and small cell carcinoma have been increasing over the past twenty years. Both of these types of carcinoma show cohort patterns that reveal a later turnaround in men's rates, suggesting that these two histologic types will also decline in the future. Among white women, all forms of lung cancer have increased dramatically with adenocarcinoma increasing the most.[5]

In Indiana, no differences in histology by gender were seen. The most frequent histology reported was squamous cell carcinoma (28.5%). As seen in the national data, the proportion of lung cancer cases diagnosed histologically as adenocarcinoma and small cell carcinoma continued to rise. Currently, 24% of the cases reported in Indiana are adenocarcinoma, and 18.9% are small cell carcinoma.[7]

Cumulative treatment for lung cancer patients in Indiana is comparable to that seen in other parts of the country. Twenty-two percent of the cases are treated with surgery, 47% receive radiation therapy, 6% receive both surgery and radiation therapy, 28% undergo chemotherapy, while 2% of the patients undergo hormonal therapy.[7]

Summary

Indiana is comparable to national statistics in many ways. For both, the lung cancer mortality rate is almost equal to the incidence rate due to the poor prognosis for individuals with this disease. Men have much higher mortality and incidence rates than women, and blacks have significantly higher rates than whites. Indiana however, does have significantly higher mortality and morbidity lung cancer rates than the United States as a whole. This is clearly attributable to the increased prevalence of cigarette smoking in Indiana. Since the primary cause of lung cancer is behavioral, a more efficacious approach to reducing lung cancer morbidity and mortality would be to effect a significant reduction in smoking prevalence. ❑

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Indiana family physician attitudes and practices concerning smoking cessation

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Abstract

Most physicians are aware of the health benefits of smoking cessation and agree they have a responsibility to help smokers quit. Many physicians, however, do not regularly address smoking cessation with their patients.

Questionnaires were sent to 2,095 family practice physicians in Indiana. Information obtained included: demographic data; office-based smoking cessation practices; counseling; and physicians' perceptions of intervention outcomes.

Most physicians (86%) asked new patients if they smoked, and 23% questioned patients about their exposure to passive smoke. Younger physicians, female physicians and urban physicians were more likely to ask new patients if they smoked. A formal smoking cessation program was used by 28% of the responding physicians. Among those not using a program, 7% reported plans to implement one in the coming year, 40% were not planning to implement one, and 53% were unsure. Physician and practice characteristics were not correlated with the use of smoking cessation programs. Only 11% of physicians considered their smoking cessation counseling skills to be excellent; 27% indicated the need for improvement in skills. One-half (52%) believed their counseling efforts were effective; almost half (45%) believed that current reimbursement policies limited their involvement in smoking cessation interventions.

Most respondents have not instituted smoking cessation programs in their practices. It is likely that a combination of strategies, including both undergraduate, graduate and continuing medical education programs and reform in reimbursement practices for cessation programs, will be required to achieve significant increases in long-term smoking abstinence rates. ❑

Most physicians are aware of the health benefits of smoking cessation, place a high importance on addressing this risk factor and agree that they have a responsibility to help smokers quit.[1,2] Smoking cessation interventions initiated by physicians have proven to be somewhat successful in getting smokers to quit.[3,4] Many physicians, however, do not use the most effective smoking cessation techniques with their patients.[1] In 1991, primary care clinicians, through office, clinic or hospital visits, had access to approximately 36 million (70%) of the 51 million people who smoked during the preceding 12 months.[5] This access provides a unique opportunity for clinicians to influence tobacco use, which is the most preventable cause of morbidity and premature mortality in the United States.

Recent studies have assessed primary care physicians' attitudes and practices regarding their patients who smoke and have examined the barriers to success in physician intervention. More than 90% of primary care physicians reported routinely asking their patients if they smoke.[1,2,6,7] Approximately 75% to 90% of physicians reported personally advising their patients to stop smoking.[1,6-8] While many physicians advised patients to quit, only 25% reported that they offered smoking cessation counseling, including setting a quit date and making referrals to smoking cessation resources, and only 11% routinely arranged patient follow-up.[1] Physicians reported being most likely to advise smoking cessation in patients who had reversible disease, were less than 60 years of age, were receptive to quitting and had made previous attempts to quit. Physicians also perceived that their greatest impact on smoking cessation was among patients with smoking-related disease followed by patients without disease but with smoking-related symptoms, and that they had the least effect among patients without smoking-related diseases or symptoms.[8]

Physicians perceive various

obstacles to intervention including the time required to counsel patients, patient receptivity to counseling, training in counseling, confidence in the ability to help patients stop smoking and lack of reimbursement.[2,6-8] An additional identified obstacle was the organization of their medical practice, including the inability to identify and track patients who smoke.[1,7] Since about two-thirds of all smokers who quit the first time will relapse and begin smoking, often repeating the cycle numerous times before they achieve long-term abstinence, it has been suggested that clinicians lose patience and their commitment to provide multiple and diverse interventions and sustained counseling for patients.[4] The impact of smoking cessation failures on physicians' motivation or effectiveness in counseling remains to be determined.

The purpose of this study was to: 1) identify the strategies that Indiana family physicians are currently using to help their patients stop smoking; and 2) identify the barriers that physicians perceive to exist in the implementation of formal, office-based smoking cessation programs. It was anticipated that the results of this investigation would be useful to clinicians who desire to develop and implement effective smoking cessation programs in their practices.

Methods

A survey instrument was developed by the authors, who include primary care physicians, a clinical nurse, a pulmonologist and health services researchers. The questionnaire was developed using the National Cancer Institute (NCI) model for physician intervention with smokers.[9] Questions were structured so as to determine practice patterns related to each of five elements in the NCI model: *ask* the patient if they smoke, *advise* the patient to quit, *assist* with setting a quit date and counseling, *arrange* for follow-up support of the patient, and *anticipate* tobacco use by children and adolescents. In addition, demographic data and questions concerning perceived barriers to the implementation of office-based smoking cessation programs were included. The focus of this study was smoking; therefore, we did not include questions regarding smokeless tobacco.

In March 1994, the survey instrument and explanatory information regarding the purpose of the study were mailed to all known family practice physicians (N=2,095) who were practicing in Indiana in 1993. The letter guaranteed anonymity to the respondents and offered each a summary of the study. The overall response rate was 720/2,095 (34.4%); the corrected (eliminated physicians not practicing or in non-primary care) response rate was 720/1,955 (36.8%).

Physician characteristics were correlated with whether the physician: 1) asked new patients if they smoked; 2) routinely counseled their patients who smoked to quit; 3) prescribed nicotine replacement therapy; 4) evaluated their counseling skills as excellent; 5) judged their effectiveness in counseling as excellent; 6) had a high estimate of the percent of their patients who abstained for six months; and 7) felt that current reimbursement policies for smoking cessation restricted their ability to counsel patients.

All data were analyzed using Student's t-test, the Chi-square test or analysis of variance. The criterion for statistical significance was $P<.05$ throughout. Means are reported along with the value at one standard deviation.

Results

The mean age of the physician respondents was 50±13.2. Most were men (86%), and the number of years in practice was 21±13.3. Nearly two-thirds of the respondents (64%) had a practice located in an urban setting. The predominant type of practice was solo practice (45%), followed closely (42%) by a group of three physicians or more. Almost 16% of the respondents were members of a multispecialty group. Slightly more than one-quarter (27%) of the physicians belonged to a health maintenance organization. The number of patients seen per day was 29±12.5. Only 38 physicians (5%) were current smokers, and 371 (62%) were lifelong nonsmokers. Of the physicians' offices, 666 (92.5%) were designated "smoke-free" *(Table)*.

Comparison of demographic characteristics of the family physicians in the study sample to family physicians in Indiana (1990) and in the United States (1993) revealed that the study sample was similar in terms of physician age, urban practice, type of practice and patients seen per day.[10,11]

Physicians were questioned about their use of formal smoking cessation programs or protocols in their offices, and 197 (28%) reported using a formal smoking cessation program or protocol. Of the offices that use formal programs, 54 (27%) use the American Lung Association program, 38 (19%) use the American Cancer Society program, 35 (18%) use

their own program, 17 (9%) use their hospital's program, 16 (8%) use the National Cancer Institute smoking cessation program, 11 (6%) use the American Academy of Family Physicians program, 10 (5%) use the Free and Clear program, and eight (4%) use Smoke Stoppers.

Of those who responded that they did not use a formal smoking cessation program, only 27 (7%) physicians reported they plan to implement one in the next year; 154 (40%) were not planning to implement a program in the next year, and 206 (53%) were unsure. None of the physician characteristics were significantly correlated with whether or not the physicians were using a smoking cessation program or protocol.

Physicians were asked to report how frequently they asked patients about their smoking, advised or counseled them to quit smoking, assisted them with setting a quit date and implementing a quit strategy, arranged follow-up support for smoking cessation and anticipated tobacco use among children and adolescents.

Asked patients

Of the physicians surveyed, 621 (86%) asked every new patient if they smoked. Only 161 (23%) routinely questioned patients about their exposure to passive smoke. Attempts to determine the degree of the patient's dependence or addiction to tobacco were reported by 509 (71%) while 621 (86%) routinely determined the patient's motivation to quit smoking.

Compared to physicians who were older, male and practiced in a rural area, younger physicians, female physicians and physicians who have a practice in an urban area were more likely to ask their new patients if they smoked although these differences were not striking. The type of practice, physician's smoking history and the physician's attitude regarding whether reimbursement was a deterrent to counseling were not correlated with whether the physician asked patients if they smoked.

Advised patients

Most physicians surveyed (662, or 93%) routinely counseled their patients who smoke to quit. However, only 240 (34%) of the physician offices used office staff to counsel their patients who smoke.

Female physicians and physicians in group practice (two or more to the group) were more likely to counsel their patients to quit compared to male physicians and those in solo practice although these differences were modest. Office location (urban or rural), the physician's personal smoking history and their opinion on whether current reimbursement is a barrier to counseling were not correlated with whether they counseled their patients to quit smoking.

Most physicians (441, or 62%) evaluated their own counseling skills as average; only 79 physicians (11%) evaluated their skills as excellent while 188 physicians (27%) stated that their counseling skills needed improvement. Yet, 359 of the respondents (52%) believed that their counseling efforts were effective. Physicians who did not perceive current reimbursement policies limiting their involvement in smoking cessation were more likely to rate their counseling skills as both excellent and effective; those physicians who felt that reimbursement limits their involvement were more likely to rate their counseling skills as needing improvement and not effective. No other variables were correlated with these perceptions.

Assisted patients

Of those physicians surveyed, 433 (61%) reported helping patients set a specific date to quit, and 567 (80%) routinely provided self-help smoking cessation materials to patients. Patients were asked to sign a smoking contract by 56 (8%) of the physicians. Nicotine replacement therapy had been prescribed within the past six months by 694 (97%) of the physicians. Nicotine replacement therapy had been used in combination with behavior modification by 528 (78%) of physicians. Nicotine replacement patches were used by 673 (94%) of the physicians while nicotine gum was used by 41 (6%) of the physicians. The use of nicotine replacement therapy was more common among younger physicians than older physicians. No other variable was found to be related to the use of nicotine patches.

Arrange follow-up for patients

Of the 663 physicians responding, 436 (66%) routinely asked patients who have received smoking cessation counseling to return for a follow-up visit. Follow-up appointments were made in the following time frames: less than two weeks, 19%; two to six weeks, 24%; and six weeks to 12 weeks, 55%.

Table

Demographics of family physician respondents (n=720)

	Frequency	Percent
Age of physician:		
under 30	6	0.8
30-39	169	23.4
40-49	207	28.8
50-59	118	16.4
60-69	142	19.7
70 and older	63	8.8
Gender:		
Male	595	82.6
Years in practice:		
0-10	203	28.2
11-20	197	27.4
21-30	109	15.1
31-40	134	18.6
41-50	45	6.3
Over 50	9	1.3
Office Location:		
Urban	428	59.4
Rural	144	20
Type of practice:		
Solo	321	44.6
2 physicians	88	12.2
3 or more physicians	301	41.8
Multispecialty:		
No	549	76.3
Member of an HMO:		
No	372	51.7
Average number of patients seen per day:		
0-10	45	6.3
11-20	143	19.9
21-30	260	36.1
31-40	176	24.4
41-50	40	5.6
51 or more	17	2.4
Physician smoking habits:		
Currently smoke:		
No	681	94.6
Ever smoked:		
No	371	51.5
Smoke free office:		
Yes	666	92.5

Anticipate tobacco use in children/adolescents/teens
Of the physicians surveyed, 642 (90%) asked teens if they smoked.

Barriers to providing smoking cessation counseling
One barrier identified was the physician's perceived success rates with patients. There were 252 physicians (39%) who estimated that fewer than 20% of their patients who quit smoking were able to abstain from tobacco for more than six months. Another 228 physicians (36%) estimated that 20% to 39% of smokers had abstained for more than six months; only 119 physicians (18%) believed that more than 50% of their patients who quit abstained for more than six months.

Male physicians were more likely to respond that their patients have abstained for more than six months. No other variable was correlated with greater than a six-month abstinence from smoking.

Additional barriers included current third-party reimbursement policies that generally do not pay for smoking counseling services, including nicotine replacement therapy. This was identified by 318 (45%) of the responding physicians; 145 (21%) responded that they were not sure if reimbursement affected their counseling.

Discussion
The present study provides the first quantitative assessment of office-based smoking cessation practices of family physicians practicing in Indiana. Our findings suggest that whereas the greatest majority of Indiana family physicians who responded to the survey indicated that smoking cessation counseling of their patients is routinely carried out, the manner in which office-based programs are being implemented raises substantive questions about the overall effectiveness of clinicians' counseling efforts.

Most physicians (85%) in this study asked their new patients, including teenagers, if they smoked, which is a critical element in implementing an office-based smoking cessation program. Only 57%, however, asked pre-teenagers if they smoked. Since a significant fraction of pre-teenagers and even younger children use cigarettes, these data indicate that Indiana family physicians may not be adequately assessing this population for the purpose of identifying young people at risk for using tobacco and counseling those who are either experimenting with tobacco use or are using it regularly. In Indiana, the annual prevalence of use of cigarettes by students in grades five, six and seven was 13.9%, 20.9% and 31.7%, respectively, in 1991.[13]

Studies over the past 30 years have documented causal links between involuntarily inhaled tobacco smoke and increased frequency of respiratory illnesses and middle ear infections in children; decreased lung growth and function of the lungs during childhood;[14] and in adults, a significant increase in the prevalence and incidence of respiratory symptoms and disease,[15] lung cancer and cardiovascular diseases.[16-18] Despite this extensive body of information in the medical literature and reviews in the lay press, only about one in five (23%) physicians in the present study asked their patients about passive smoking. These data suggest that more emphasis must be given to the topic of passive smoking in medical schools, residency training and continuing medical education programs.

In the present study, younger physicians, female physicians and physicians practicing in an urban area were more likely to ask new patients if they smoked cigarettes compared to older, male physicians and physicians who practice in a rural area. These findings are similar to previous reports that found that younger physicians were more likely than were older physicians to determine a patient's smoking status.[19] The likelihood of physicians asking patients about their smoking status in our study was not related to the physician's own smoking behavior, the nature of the physician's practice or the physician's perception of third-party reimbursement for smoking cessation or counseling services. Reimbursement was not found to be a deterrent to counseling, and we conclude that education would more likely be successful as an intervention in changing physician behavior.

In the present study, more than 90% of physicians reported that they regularly counseled their patients to quit smoking. This high rate of counseling activity among Indiana physicians likely reflects general familiarity and acceptance of recent scientific publications regarding both the clinical effectiveness[4,20] and cost-effectiveness[21] of physician advice about smoking cessation.

While more than 90% of physicians reported that they counseled their patients to quit smoking, only about one-third (34%) indicated that they used their office staff in this effort. A growing body of literature indi-

cates that successful smoking intervention programs provide multiple opportunities for both physicians and nonphysician counselors to interact with the patients over the longest possible time period.[4] Continuing medical education programs and education initiatives for nonphysician professional staff need to incorporate counseling strategies that involve more office "team" management of the tobacco dependent patient.

Approximately one-half (52%) of physicians reported that they considered themselves to be effective in counseling techniques. Only a minority (11%) considered themselves excellent. Recently, programs to improve physicians' knowledge and skills in counseling have been initiated. An NCI training program for physicians was begun in 1991 with a goal of training 100,000 U.S. physicians.[12] An effort to educate clinicians in smoking cessation is being coordinated by the American Medical Association and is endorsed by the NCI, CDC and the American Society of Addiction Medicine. These national efforts will be unlikely to produce significant changes in physician practices unless local initiatives involving education of physicians and their office staffs are developed and implemented.[22]

Physicians in the present study used a variety of techniques to assist their patients in smoking cessation. Nicotine replacement therapy had been used during the past six months by 97% of the physicians responding to the survey. Nicotine gum was used very infrequently, while the nicotine patch was used more than 90% of the time, a likely reflection of recent data regarding the efficacy of the nicotine patch for smoking cessation.[23,24] Most physicians (78%) in our study combined behavior modification with nicotine replacement therapy. Younger physicians were significantly more likely to use nicotine replacement therapy than older physicians.

Approximately two-thirds (66%) of respondents in the current study arranged for a follow-up visit after the smoking intervention. Only 19%, however, arranged for a follow-up visit within the two weeks of the smoking cessation intervention, and 24% didn't schedule a follow-up visit until three months after the intervention. Recent studies indicate that early and intense monitoring of patients following the smoking cessation intervention is a strong predictor of both short-term and long-term abstinence from tobacco.[23] Recent data suggest that routine nicotine replacement therapy using the patch achieves complete nicotine replacement in only 33% of patients. Higher doses of nicotine replacement may be necessary in achieving abstinence in some smokers, but further research will be necessary to clarify the safety and efficacy of this approach.[24]

A major potential barrier to wider implementation of organized, office-based smoking cessation programs may be physician perception of a lack of success with their patients who smoke. In the present study, approximately one-half (48.2%) of physicians indicated that their counseling efforts were either not effective or they were unsure of their effectiveness. Even the most successful smoking cessation programs result in abstinence from smoking at one year in only one of four patients. Physicians will need to measure success not by the number of patients who abstain from smoking for more than six months but by how many patients they motivate to move along the continuum toward long-term abstention.

Another potential barrier, current reimbursement patterns, was identified by almost one-half (48%) of the physicians who responded. Extended reimbursement for preventive health services may increase the adoption and use of effective tobacco use prevention programs in primary care physicians' offices.

In their review of literature on changing physicians' practices, Greco and Eisenberg list four general methods that have been used: 1) education; 2) feedback; 3) physician participation; and 4) administrative intervention. They found that clinical practice guidelines have been remarkably unsuccessful in influencing physicians' practice behavior. Practicing physicians often rely more on recommendations of colleagues or their own experience. Two methods, however, were found to be helpful. An especially promising method is the use of "opinion leaders" (men and women named by their peers as trusted sources of clinical information). Second, the use of feedback to physicians that allows them to compare their practices to those of their colleagues has been found effective.[25]

How might these methods be applied to improve physicians' practice concerning smoking cessation? The NCI model for physician intervention with

smokers may be considered a "clinical practice guideline." Although these guidelines have been remarkably ineffective by themselves in changing physicians' practices, it may be possible to influence a change by identifying "opinion leaders" in the community who would be willing to adopt the NCI model or a comparable model as a standard of care. Sufficient resources would exist in most group practices or HMOs to implement the NCI model. This would be less likely in solo practitioners' offices. Similarly, providing family physicians with ongoing feedback about their practices concerning smoking cessation would be possible in group practices but more difficult and costly for solo clinicians. The social environment and organizational context of medical practice may be a critically important determinant of change in physician behavior.[26]

Finally, Greco and Eisenberg raise several questions that are especially relevant to any study of physician practices concerning smoking cessation.[25] First, "is the chosen intervention appropriate for the desired change in practice?" In other words, do family physicians' practices concerning smoking cessation reflect a lack of knowledge concerning the NCI recommendations? Second, "do physicians support the proposed change in their practice?" Because smoking quit rates with current strategies are relatively low, family physicians may not share the enthusiasm of the NCI or other experts for the proposed change in their practice style. Finally, "how will the intervention be perceived?" In other words, will providing physicians with feedback on their performance in this area be viewed as threatening, or as an opportunity? Additional requirements on their practice may be viewed as another practice burden.

Significant increase in the use by family physicians of effective, office-based smoking cessation programs will likely depend upon several changes. Expanding medical school and residency curriculum in preventive health services, including smoking cessation, is required.[27] More emphasis must be given to continuing medical education programs that use effective learning techniques.[28] Finally, health care reimbursement strategies that promote preventive health practice will be needed. Since tobacco cessation programs are among the most cost-effective preventive health strategies,[29] it would be wise public policy to significantly expand research funding to improve procedures and techniques that enable practicing physicians to enhance their office-based tobacco control programs. ❑

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Workplace tobacco interventions

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Abstract

Health promotion programs are becoming an integral part of work site activities. Recent data from Indiana businesses suggest that smoking is a leading concern. An objective has been adopted by the Indiana Chamber of Commerce that states that the number of employers with work site smoking cessation policies should increase. Smoking control and cessation programs implemented in industry have contributed to a decrease in the number of smokers and in the health risks of nonsmokers exposed to environmental tobacco smoke. This report describes the effectiveness of work site smoking control programs. ❑

The role of the workplace in health promotion has taken an increasingly prominent role.[1] The link between behavioral risk factors on health care costs and absenteeism has been extensively reviewed.[2] A recent prospective study by Ryan et al[3] associated cigarette smoking with adverse employment outcomes such as industrial accidents, occupational injuries, disciplinary action, as well as absenteeism. Hypertension detection, cancer detection, weight reduction programs, substance abuse programs, stress management programs and exercise programs are being used by corporations to reduce the rapidly rising costs of health care. In addition, smoking cessation has come to play an integral role in disease prevention offered by industry.

In addition, the strong link between passive smoking or environmental tobacco smoke (ETS) and human disease has taken a prominent place in the push for the workplace to take a proactive stance concerning smoking cessation. Recent reports from the Environmental Protection Agency (EPA),[4] which classified environmental tobacco smoke as a known human carcinogen, and the National Institute for Occupational Safety and Health (NIOSH)[5] have given impetus for workplaces and public facilities to go smoke-free.

The specific health effects that have been attributed to ETS exposure of adults include lung and other cancer and heart and lung disease.[4-6] Glanz and Parmley[6] have estimated that ETS exposure is the third leading cause of preventable death in the United States after active smoking and chronic alcohol abuse. They estimated that of the 53,000 annual deaths due to ETS, 37,000 were due to heart disease. The adverse effects upon the heart are due to multiple factors. Passive smoking increases the concentration in blood of carbon monoxide, with resultant displacement of oxygen from hemoglobin and less oxygen availability at the tissue level. Passive smoking also affects platelet function, which can facilitate thrombus formation and atherosclerotic development. Passive smoking causes decreased concentration of high density lipoprotein in blood. Heart muscle injury from the activity of free radicals after an ischemic event is worsened by passive smoking. Epidemiological studies have observed that passive smoking increases the risk of both fatal heart disease as well as nonfatal heart disease.

Passive smoking also contributes to an increased risk of lung cancer in nonsmokers.[4,5] It is estimated that 3,000 to 4,000 excess deaths occur annually as a result of passive smoking. Multiple epidemiological studies from different countries and over the past 15 years have shown increased relative risks of nonsmokers living with smokers.[4,5] Most of these studies have focused on home exposure. Studies performed in industries that allowed smoking show that ETS exposure can be equal to or greater than exposure in smokers' homes.[7]

The "general duty clause" of the Occupational Safety and Health Administration Act (OSHA Act) requires that the employer has a general duty "to furnish to each of his employees ... a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees" (section 5 [a][1]). OSHA has also recently proposed that all workplaces be essentially smoke-free.[8]

The number of work sites banning smoking has dramatically

increased in the past decade. Nearly 60% of workplaces with over 50 employees in 1992 had policies banning smoking or directing smoking to an area that was well ventilated.[9] This was compared with 1985 when 27% of workplaces had such policies. This increase occurred not only from health concerns but also from potential legal liability and legislative changes that had occurred.

Numerous studies have reviewed the effectiveness of smoking policies on quit rates, air quality and employee satisfaction. The New England Telephone Company implemented a nonsmoking policy in 1986.[10] Employees were surveyed 20 months later. While most were satisfied with the policy, half of the respondents wanted more restrictions on smoking.

Sorensen et al[11] describe a short-term intervention study that included a three-month intervention period for eight work sites in the Bloomington, Minn., area. Quit rates were higher in the intervention group as compared to the control group. Greater success occurred when individuals worked with nonsmokers and were told to not smoke by coworkers.

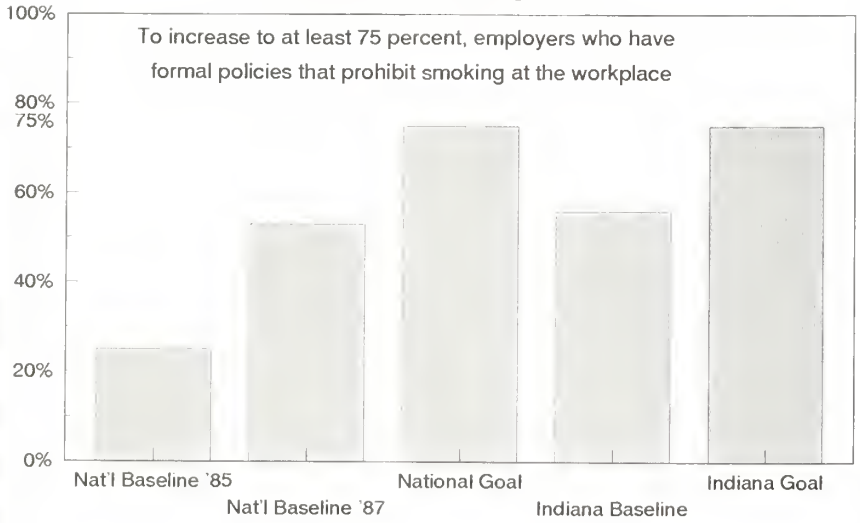
Patten et al[12] describe the role workplace policies on smoking cessation play on exposure to environmental tobacco smoke in California. There was noted to be a significant increase in the number of smoke-free workplaces from 1990 to 1993. This increase in the number of smoke-free workplaces resulted in a significant decrease in environmental tobacco smoke exposure to nonsmoking employees. Nonsmoking employees were 15 times more likely to be exposed to environmental tobacco smoke if working in a location without a work site smoking policy versus a work site with a policy.

Hospitals and health care institutions have increasingly addressed the issue of smoking within their facilities.[13,14] The hospital industry became the first industry to go smoke-free industry wide. The standards implemented by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) were to be in place in hospital facilities by Dec. 31, 1993. A smoking ban standard and a smoking exception standard were to be in place. More than 95% of hospitals complied with the smoking ban standard two years after implementation, and 90% complied with the smoking exception standard. Stillman et al[14] reviewed the policy of smoking cessation that occurred at the Johns Hopkins Medical Institutions in 1987 and noted that smoking cessation increased, environmental tobacco exposure decreased, and the number of fires significantly decreased.

Nonsmoking areas in commercial aircraft have expanded from certain sections of the planes to all cabin sections on all domestic flights. These have all occurred because of potential adverse health effects on passengers and flight crews and attendants.

Table

Indiana Chamber of Commerce Wellness/Healthy Lifestyles- Workplace Smoking Goal:



Source: *Outlook*/April-May 1993.
Used with permission - Indiana Chamber of Commerce

In addition to federal laws, city and state laws and ordinances have been enacted to restrict smoking in public facilities and workplaces.[12,15-17] *Healthy People 2000* calls for states to enact legislation to restrict or ban smoking in workplaces.[18] An extensive survey of no-smoking laws in cities with a population greater than 25,000 as well as states was performed in 1989.[15] By 1989, 44 states and 500 (51%) of the cities had some smoking restriction. There was a varied response to laws concerning government buildings, public places, restaurants and private workplaces. Only 17% of cities and 20% of states had comprehensive laws restricting smoking in all four of these sites. The number of city nonsmoking laws increased tenfold from 1980-1989.

California has been active in enacting workplace legislation on tobacco control. More than half of the ordinances in place by 1992 related to workplace smoking control were in California.

In 1985 legislation was enacted in New Jersey to control smoking in places of employment of more than 50 employees.[16] Large employers were surveyed after the implementation of policies. The majority of respondent companies (97%) had implemented restrictive policies with most of the employees (80%) supportive of such policies. It was felt that the state law was an important factor in workplace smoking restrictions.

In 1987, Indiana regulated smoking in public places.[17] The law states that persons in charge of public buildings are required to designate a no-smoking area and may set aside a place for smoking; where both smoking and no-smoking areas are designated, persons in charge may take 'reasonably necessary' measures to accommodate both smokers and nonsmokers; conspicuous signs reading 'Smoking is Prohibited by State Law Except in Designated Smoking Areas' must be posted; persons in charge must request those in violation of the law to refrain from smoking and remove anybody who refuses to refrain from smoking upon request; and persons who smoke in public buildings in violation of the law are guilty of a Class C infraction."

In 1992 the Indiana Chamber of Commerce surveyed its members and suggested that by the year 2000 at least 75% of the employers have workplace smoking cessation policies. Fifty-six percent were noted to have policies at the time of the survey *(Table)*. This survey was part of the broader issue of wellness and healthy lifestyles. The chamber recommended a total ban on smoking and discussed the value of a smoking ban policy and follow-up to determine effectiveness. ❑

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SECOND OPINION

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Racial differences in the impact of smoking-attributable disease on health care costs in Indiana

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Abstract

The purpose of this investigation was to estimate the direct health care costs attributable to smoking in Indiana and address these costs in the context of the differential health impact of tobacco use on minorities. Estimates of direct health care costs for smoking in 1990 were calculated using the Smoking Attributable Morbidity and Mortality and Economic Costs (SAMMEC 2.1) computer-based program developed by the Centers for Disease Control and Prevention. The proportion of direct health care costs attributable to smoking were calculated by evaluating personal health expenditures from five cost centers including hospitalization, physician services, services of other health practitioners, nursing home care and drugs.

Study findings indicate that direct health care costs were more than $700 million in 1990. Health care spending among whites accounted for 53% of total costs. Per capita costs among smokers and nonsmokers ≥ 35 years of age amounted to $278. Although whites accounted for the majority of direct health care costs attributable to smoking, per capita costs were higher among African Americans compared to whites, reflecting the differential smoking-attributable mortality rates experienced by these two groups. ❑

Although prevalence rates for smoking have decreased over the past three decades, smoking prevalence rates have remained consistently higher for men than women and for blacks compared to whites.[1] These gender- and race-specific differences in smoking prevalence are reflected in differences in smoking-attributable mortality (SAM) and years of potential life lost (YPLL) rates. The SAM rate for men is more than twice the rate for women, and the SAM rate for blacks is 12% higher than for whites.[2,3] Additionally, the rate of smoking-attributable YPLL before age 65 for men is about three times that for women and twice as high for blacks than for whites.[2,3]

In 1993, the direct medical care costs attributable to smoking in the United States were estimated at $50 billion: $26.9 billion was associated with hospital expenditures, $15.5 billion with physician-related expenditures, $4.9 billion for nursing home expenditures, $1.8 billion for prescription drugs and $900 million for home health care.[4] The average per capita cost for all smokers and nonsmokers in 1985 has been estimated at $205, ranging from $54 per capita in Puerto Rico to $284 per capita in Rhode Island.[5]

The average costs for males are 32% higher for ever smokers than for never smokers ($35,914 vs. $27,276); among females, the average costs are 24% higher for ever smokers than for never smokers ($52,902 vs. $42,783). Compared to never smokers, total expected lifetime medical expenditures are 47% higher for male heavy smokers (25 cigarettes a day) and 41% higher for female heavy smokers.[6]

In Indiana, almost 10,000 deaths and more than 120,000 YPLL are attributable to smoking each year.[7] Smoking prevalence in Indiana has declined slowly over the past 10 years (32.2% in 1985 and 27% in 1992).[1] Despite this slow decline, in 1992 smoking prevalence in Indiana was still 1.4 percentage points higher than the United States as a whole (27% vs. 25.6%, respectively).[1,8] As the uptake of cigarette smoking among adolescents continues to increase and cessation activity among adults slows down, the economic impact to the state will be substantial.

The purpose of this investigation was to estimate the direct health care costs due to smoking-related illness in Indiana. In addition, smoking-attributable costs are addressed in the context of the differential health impact of tobacco use on minorities in Indiana.

Method

Estimates of direct health care costs for smoking in 1990 were calculated using SAMMEC 2.1. SAMMEC is a useful tool designed

to measure the disease and economic impact associated with cigarette smoking.[9] A discussion of the methodology used to calculate smoking-attributable mortality for Indiana has been published.[7] SAM was calculated using relative risk estimates for 22 adult (≥35 years of age) smoking-related diseases and relative risk estimates for four perinatal (<1 year of age) conditions and is based on the smoking-attributable fraction for these diseases. Mortality data for 1990 were obtained from the Public Health Statistics Division of the Indiana State Department of Health. Cigarette smoking prevalence estimates were obtained from the Behavioral Risk Factor Surveillance System. SAM rates were age-adjusted and standardized to the 1990 U.S. population.

Direct health care costs due to smoking were calculated by evaluating personal health expenditures from five cost centers: hospitalization, physician services, services of other health practitioners, nursing home care and drugs. Total 1990 expenditures for these cost centers in Indiana, obtained from the Health Care Financing Administration, include $4.68 billion in hospitalization, $2.16 billion in physician services, $1.23 billion in nursing home costs, $1.19 billion in medication and $3.3 million in other professional services.

The proportion of these costs attributable to smoking was obtained by applying the smoking-attributable fractions (SAFs) for annual hospital days and annual physician visits for the treatment of persons with neoplastic, cardiovascular and respiratory diseases for the group under study. Per capita costs were also calculated and reflect average rates that included smokers and nonsmokers. Rates of hospitalization and physician visits in the past 12 months for current, former and never smokers were used to calculate relative rate estimates comparing current and former smokers to never smokers. The relative rates were then used along with prevalence data on smoking to calculate the SAFs.[9]

Results

In 1990, 9,218 (92.7%) smoking-attributable deaths occurred among whites, 717 among African Americans (7.2%) and 12 among other minorities (0.1%). Most of these deaths were due to cardiovascular diseases, followed by neoplasms, respiratory diseases and perinatal and other diseases.[7] Although the SAM for whites is substantially higher compared to African Americans and other minorities, the SAM *rates* were the highest for African Americans *(Figure 1)*. SAM rates were the highest among African American men (613 deaths/100,000) followed by white men (587.8 deaths/100,000), African American women (250.1 deaths/100,000) and white women (229.4 deaths/100,000). In addition, overall SAM rates were almost three times greater among men compared to women.[7]

Because of the small sample sizes for the nonwhite, nonAfrican

Table

Total and per capita smoking-attributable direct health care costs by race and sex - Indiana, 1990

	Men		Women		Both genders	
Race	Total*	Per capita**	Total*	Per capita**	Total*	Per capita**
Whites	$272	$247	$106.7	$84	$378.7	$159
African Americans	$241.9	$3,331	$87.6	$957	$329.5	$2007
Combined	$513.9	$437	$194.4	$142	$708.3	$278

* in millions of dollars

**among people ≥35 years of age, based on 1990 census data for Indiana

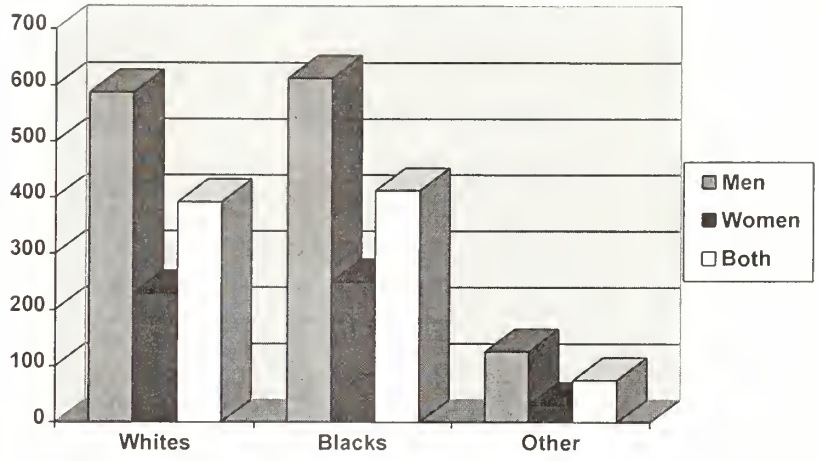
American category, health care costs attributable to smoking could not be calculated for this group. However, health care costs are presented for both whites and African Americans. Direct health care costs attributable to smoking amounted to over $700 million in 1990. Health care spending among whites accounted for approximately 53% of total costs ($378 million). Among the five major cost centers for direct health care costs, hospitalization accounted for most of the total direct health care costs for both whites and African Americans (67.9% and 68.2%, respectively). Overall, the percentage of smoking-attributable direct costs by major cost centers was similar among whites and African Americans *(Figure 2)*.

The proportion of costs by gender was similar across whites and African Americans. Direct health care spending attributable to smoking among African American men accounted for 73% of costs compared to 72% among white men *(Table)*.

Total per capita costs among people ≥35 years of age amounted to $278 in 1990. This estimate represents all residents of Indiana over the age of 35, smokers and nonsmokers alike. Although whites accounted for the majority of direct health care costs attributable to smoking in 1990, per capita costs were the highest among African American men and women ($3,331 and $957, respectively). Overall per capita costs were more than three times greater among men compared to women ($437 and $142, respectively).

Discussion

Direct health care costs associated with smoking among Indiana residents are substantial. This is



* Per 100,000 people ≥ 35 years old, adjusted to the 1990 U.S. population

Figure 1

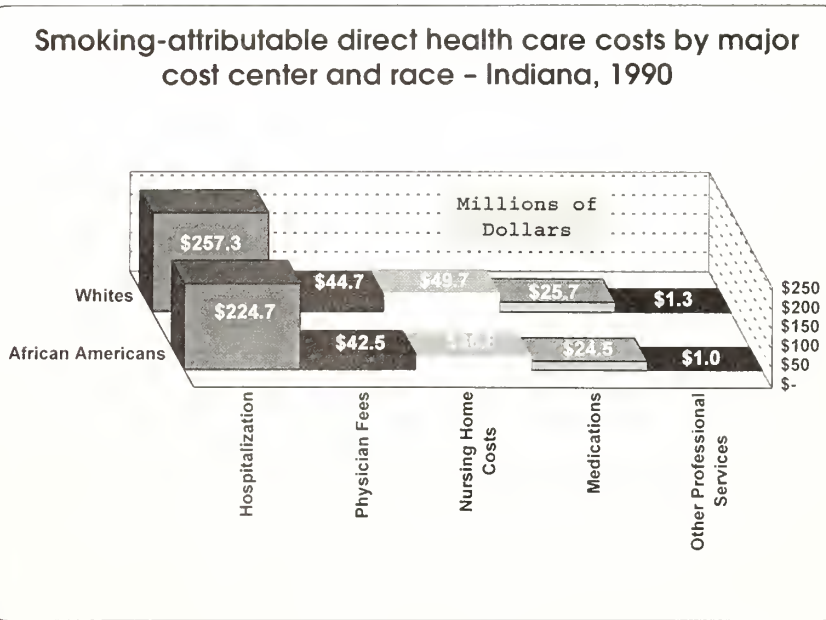


Figure 2

not only a reflection of state-specific estimates of the major cost centers for health care delivery but is also impacted by the high prevalence of smoking among Indiana citizens. Although overall direct health care costs associated with smoking are higher among whites, per capita costs are much greater among African Americans, reflecting the differential smoking-attributable mortality rates experienced by these two groups.

These direct health care cost estimates are probably underestimated since they reflect the total disease burden calculated from current smoking rates. Given typical lags between exposure and onset of illness for smoking-related diseases, the mortality and morbidity experienced today from smoking reflect smoking prevalence rates from 10 to 15 years ago. Thus, higher rates of smoking-related mortality and costs would be expected if typical smoking prevalence estimates from 10 to 15 years ago were used.

The estimates presented in this investigation also do not include smoking-attributable indirect morbidity and mortality costs. Indirect morbidity costs represent those costs due to lost income and productivity for persons who are sick or disabled from smoking-attributable diseases. Indirect mortality costs represent the costs due to lost income and productivity due to premature death from smoking-related disease or injury. Total costs attributable to smoking are substantially greater than the direct health care cost estimates presented here.

The economic benefits of quitting for the individual smoker and society are substantial. Quitters below the age of 45 can avoid 54% to 67% of expected lifetime losses due to smoking. For heavy smokers (more than two packs per day) under the age of 45, the total lifetime dollar benefit of quitting is about $34,000 for men and about $12,000 for women. Similarly, quitters over the age of 65 can avoid 32% to 53% of expected lifetime losses due to smoking. For example, for a heavy smoker over the age of 65, the total lifetime dollar benefit of quitting is about $3,700 for men and about $4,600 for women.[10]

Although about 46 million American adults continue to smoke, an equal number were former smokers in 1993.[11] The prevalence of cessation is higher among men, whites and people living at or above the poverty level.[11] A number of high-risk populations have been targeted by the Department of Health and Human Services to reduce overall tobacco use, including women, black adults and people with a high school education or less.[12]

Emphasis should be placed on deterring the onset of smoking among youths. Each year, more than 1 million young people start to smoke, adding $10 billion over their lifetimes to the cost of health care in the United States.

When coupled with school-based tobacco use prevention programs, raising excise taxes on tobacco products to reduce demand and eliminating or severely restricting tobacco product access can be powerful tools in discouraging tobacco use among youths. ❑

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Smoking cessation in primary care

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Nicotine dependence is a serious but treatable medical disorder.[1] The importance of this is highlighted by the fact that nicotine dependence produces a devastating disease burden in our country where smoking accounts for 19% of all deaths in the United States.[2] Health care professionals can play an incredibly important role in helping their patients stop smoking and are ideally positioned to initiate intervention since most smokers see a physician every year. As physicians, we have all been confronted with patients who continue to smoke despite severe medical complications to smoking. Though frustrating to the practitioner, these patients exhibit characteristics of a severe dependence just as to alcohol or other drugs. In this article, three areas will be outlined where all health care professionals can play an important role: 1) the medical setting; 2) an office-based intervention; and 3) pharmacologic therapy.

The medical setting

Stopping smoking is a process, and the more consistent we make the message that smoking is an unacceptable behavior, the more likely we are to break through the defenses and denial of the smoker. First, we should ensure that health care professional offices and hospitals are smoke-free. It is important for patients and staff to understand that environmental tobacco smoke is a class A carcinogen, as are radon, asbestos and benzene. Health care professionals can be active within their communities so that more public places are made smoke-free by changing city/county ordinances. Nonsmokers, such as patients with asthma and chronic obstructive pulmonary disease, deserve to have smoke-free restaurants and other public places.

Furthermore, we should reduce the exposure of our patients to advertising and promotion of tobacco products by subscribing only to magazines for our offices and hospitals that contain no tobacco advertising. A list of such magazines is available from the AMA. If this were done in all hospitals and physicians' offices throughout the country, a clear message would be sent to advertising firms and magazines of the importance of smoking as a health issue.

Another important concept for health care professionals is to not focus all attention on abstinence as the only outcome. There are well-defined stages through which patients move in making this dramatic lifestyle change. Though abstinence is the ultimate goal, movement through the stages of change is a very important outcome in itself. The stages of change commonly used are: 1) precontemplation – the patient has never really thought about stopping smoking; 2) contemplation – the patient may have thought about stopping smoking but has not set a date to stop within the next six months; 3) preparation – the patient is moving toward stopping and has set a stop date within the next month; 4) action – the patient has initiated the abstinence process; and 5) maintenance – the patient has achieved initial abstinence and now is concentrating on prevention of relapse.[3] Patients in the preparation stage of readiness are twice as likely to stop smoking on the next attempt compared to those who are in contemplation at the time of the initial intervention.[4] Thus, one measure of success is moving a patient to a higher stage of change. This can be done with a brief office intervention or during a "teachable moment" for a hospitalized patient.

Office-based intervention

The National Cancer Institute has developed an office-based intervention for physicians and other health care professionals that provides brief but effective intervention. This is based on the four "A's:" 1) ask all patients about their smoking behavior; 2) advise every smoker to stop smoking; 3) assist each smoker in setting a stop date; and 4) arrange a follow-up visit.

First, the smoker needs to be identified, and when possible, the risk of smoking and benefits of stopping smoking should be personalized for that patient. Many physicians have their office staff identify all smokers before the doctor sees the patient. Nonphysician health care professionals such as nurses, respiratory therapists and counselors can be trained to support the physician intervention and provide counseling and follow-up for the patient.[5] The concept of collecting smoking

status as a new vital sign has been incorporated in many smoking cessation guidelines and has been shown to increase the frequency of advice for smoking cessation.[6] This puts the information in front of the physician and makes it easier to go to the second "A," which is to advise all smokers to stop smoking.

Personalizing the risk for the individual patient is very important since patients' perception of whether their current medical problem is related to their smoking is an important motivating factor.[4] Assisting the patient in setting a date to stop should be focused within the next 30 days, if possible. This depends upon the patient's stage of readiness; thus if the physician can move the patient toward action, this improves the chance of long-term abstinence.

The final "A," arrange a follow-up visit, can be placed around the time of the stop date or subsequent to the initiation of pharmacologic therapy. The importance of a follow-up visit cannot be over-emphasized. The initial follow-up visit should occur within the first two weeks after the stop date. The first two weeks are of particular importance as those who achieve initial abstinence during this time are more likely to have sustained abstinence.[7,8] Furthermore, the more follow-up visits in the initial cessation process, the greater the chances of the patient's achieving abstinence.[9] More detailed information, including a manual, *How to Help Your Patient Stop Smoking*, and the self-help brochure, *Clearing the Air*, is provided by the National Cancer Institute (1-800-4-CANCER).

Pharmacologic therapy

Primary care physicians are ideally positioned to provide and monitor pharmacologic therapy. Currently available pharmacologic therapy is a useful adjunct to smokers who are trying to stop smoking, but many more agents are undergoing testing. Nicotine gum has been available for use for many years, and recently the 4 mg size has been released for use in the United States. Though nicotine gum has recently been overshadowed by the introduction of nicotine patches, it still has a role in smoking cessation and is effective when used properly. Future trials are likely to demonstrate its additional utility when used in conjunction with nicotine patch therapy, either for acute situations where relapse is more likely to occur or as a longer term taper once the initial patch phase is completed.[10]

Though nicotine gum has recently been overshadowed by the introduction of nicotine patches, it still has a role in smoking cessation and is effective when used properly.

Nicotine patch therapy has proven to be effective in multiple different studies[11] and, when used in combination with the NCI physician intervention with follow-up by a nurse, produced an end-of-patch-therapy cessation rate of 50% of those assigned to active patch, compared to 25% of those on placebo.[7] At one year, there was still a robust 27% versus 14% stop rate. Even with minimum intervention, nicotine patch therapy is effective, producing six-month stop rates of 26%.[12]

Cotinine is considered the biologic measure of choice when used for monitoring nicotine replacement therapy in smokers.[13] Using the concept of therapeutic drug monitoring, it is possible to calculate the nicotine replacement dose that will be necessary to achieve 100% replacement. This is done by dividing the steady state level while on nicotine patch therapy and not smoking by the baseline cotinine (while smokers are smoking). When using a standard 21 or 22 mg per day dose, most smokers will achieve approximately 50% replacement using this calculation.[14] Thus, using a single, fixed nicotine patch dose may not meet the biologic needs for adequate nicotine replacement in all smokers, and better matching of the dose may enhance the efficacy of nicotine patch therapy.

Two recent studies have reported on the case of higher dose patch therapy. One showed better efficacy with the higher dose, and the other did not.[12,15] Though the efficacy of high-dose therapy has not been proven conclusively, it may be beneficial for those who have tried the standard dose and failed or in those heavier smokers who are unlikely to achieve adequate replacement with a standard dose.[16] Intuitively, it

stands to reason that a single dose is not going to be effective for all smokers.

Improved dose matching to achieve 100% nicotine replacement can be approached in two general ways. First, the positive correlation between self-reported smoking rate in cigarettes per day and cotinine levels at baseline can be used to identify patients who may need higher doses.[15] For patients who smoke 20 cigarettes a day or less, a single 21 or 22 mg nicotine patch may suffice, while those smoking between 20 and 40 cigarettes per day may need an intermediate dose of 33 or 35 mg per day for relief of withdrawal symptoms and initiation of smoking cessation. Those smoking 40 or more cigarettes per day should be considered for a dose of 44 mg per day.

For a more refined assessment of the dose matching, blood cotinine levels can be used to determine the initial patch dose and then rechecked at steady state (after three to four days of treatment) to make any necessary adjustments. For a baseline cotinine of <200 ng/ml, an initial dose of 21 or 22 mg/d may suffice, while for levels between 200 and 300 ng/ml, doses of 33 or 35 mg per day will likely be needed. For those with a cotinine of >300 ng/ml, a dose of 44 mg/d may be needed to achieve adequate replacement levels. The 44 mg/d dose of nicotine patch therapy has been shown to be safe for use in heavy smokers,[15-17] but use of doses higher than this has not been reported.

In an attempt to stop smoking, the first two weeks of nicotine replacement therapy are critical.[7,8] After initiating nicotine patch therapy on the stop date, the patient should have a follow-up visit within the first two weeks with the health care professional. If abstinent at this visit, the patient can continue the same replacement dose for another two weeks, and then it can be decided about another return visit and how to adjust the dose. Much of what is done here depends upon the individual patient, the amount of withdrawal symptom relief and the presence of the urge to smoke.

For those who have not stopped smoking at four weeks while on the patch, it should probably be discontinued and the patient encouraged to set a new stop date in the near future. However, if the patient has substantially reduced the smoking rate on a single nicotine patch dose but is still struggling, increasing the dose by adding a 7, 11 or 14 mg patch should be considered. Most patients will use the nicotine patch for four to eight weeks, but the optimal duration of therapy has not been determined. Thus, the follow-up visits are important to determine the length of therapy and what tapering schedule to use for that patient.

There is a spectrum to the severity of nicotine dependence among smoking patients. The patient with heart disease who continues to smoke obviously is more severely dependent than a person who has no tobacco-related diseases. Thus we need to provide an array of treatment options in a stepped-care model if we are to provide the most effective treatment.

Patients with a higher degree of nicotine dependence may need a more intensive program such as a group intervention. Outpatient group programs are available through most hospitals or community organizations and usually have several sessions with a combination of lectures and group therapy. The highest level of intervention currently available is an inpatient treatment program where patients are hospitalized to initiate abstinence.[18] Such programs include lectures, group therapy, pharmacologic therapy, individual therapy, exercise, stress management and dietary instructions as well as an intensive support system provided in a smoke-free milieu. This type of program is obviously meant for those with the most severe nicotine dependence who have tried to stop smoking in other ways but have been unable to achieve initial abstinence or for individuals with life or limb threatening tobacco-related diseases.

Many pharmacologic agents are under investigation. The nicotine nasal spray and bupropion seem to have the most potential.[19,20] More pharmacologic adjuncts probably will be available in the future, and trials will be performed where combinations of existing and future products are used that will improve their efficacy.

All health care professionals can be involved in the process of helping patients stop smoking, but the physician's role is key. In addition, using other members of the health care team can enhance the physician intervention. Applying the four "A's" from the NCI program to the everyday practice of medicine is an important start. When using pharmacologic therapy, applying the concepts of therapeutic drug monitoring may be important in achieving initial

abstinence while using nicotine patch therapy. For patients who need more intensive therapy, community resources are usually available, and a select few may need inpatient treatment in order to achieve initial abstinence. ❑

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Treating highly dependent smokers with nicotine gum and patches

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Smoking prevalence in the United States has been decreasing since the 1960s, and many occasional or light smokers (<10 cigarettes per day) have already quit. The percentage of heavy smokers (>25 cigarettes per day) was about 25% in 1974, 29% in 1980 and 22% in 1991.[1] Of the 46 million cigarette users in the United States, an estimated 10 million are considered to be highly dependent (hard-core) smokers.[1]

What is a highly dependent smoker?

The descriptive term highly dependent (hard-core) smoker is a person who smokes 25 or more cigarettes a day and is unable to stop without intensive help.[2-4] This individual is less likely to be successful in quitting and much more apt to develop tobacco-induced diseases and die prematurely than an occasional or low dependent smoker. In addition, as compared to a light smoker, a highly dependent smoker has: more trouble with nicotine withdrawal symptoms; stronger urges and cravings for cigarettes; greater problems with weight control; and higher scores on the Fagerström Tolerance Questionnaire, which is a physiologic nicotine dependence scale for smokers[4-6] *(Table 1)*.

According to Velicer et al,[7] highly dependent smokers are also more apt to report that:

- their cigarette smoking is routinely pleasurable;
- after not smoking for a while, smoking a cigarette makes them feel "great";
- they like the image of being a cigarette smoker;
- their family and friends like them better when they are smoking because they become irritable when they try to quit;
- smoking helps them to concentrate and work more effectively; and
- their decision to continue smoking gives them a sense of autonomy in choice-making.

Some people may have a genetic predisposition toward nicotine addiction.[2,8] These people also may have encountered painful, early life experiences that predispose them to drug dependency, including parental abuse or neglect, inconsistent parenting, emotional deprivation, parental shaming and/or chaotic family interactions. These negative events deleteriously affect the self-respect, self-confidence, self-determination, self-discipline and self-control of the youngsters who experience them.

Most smoking cessation interventions for the highly dependent smoker focus on the following: reducing nicotine dependency; changing the psychological and behavioral factors involved in smoking rituals; learning new living patterns consistent with being a non-smoker; and changing ways of thinking in order to decrease the likelihood of relapse.

What smoking cessation methods are most effective?

Every known smoking cessation method claims a certain degree of success. Some techniques, however, are more effective than are others.

Law and Tang[9] analyzed data from 188 randomized controlled trials of smoking cessation interventions and concluded that "physicians should take time to advise all their patients who smoke to quit." An estimated 2% of consecutive smokers who were given only this advice stopped smoking and did not relapse for at least one year. Although the effect is modest, it is cost-effective. Supplementary interventions (follow-up letters, visits and telephone calls) have effects that are variable but nevertheless are worthwhile. Those people who are highly dependent smokers but intent on stopping should be given personal advice to quit and supplementary interventions as appropriate and offered nicotine replacement therapy.

Behavior modification therapy, including aversion therapy, silver acetate (gum or mouth spray), sensory deprivation and hypnosis have shown minimal, if any, efficacy in controlled trials. Nonspecific behavioral modification approaches result in efficacy rates of about 2%. Scare tactics tend to induce feelings of futility and defeat, producing either modest short-term quit results or no progress at all. About 80% of all smokers who succeed in quitting reach their goal by using the "cold turkey" method.

For the highly dependent smoker, there are no short-cuts to cessation success. The physiological, psychological and sociocultural rewards of smoking are not easily relinquished, and fewer are successful in quitting using the

cold turkey method. When the desire to quit is strong, however, the most optimal chance for recovery can be found in a scientifically sound and professionally directed program, combined with nicotine replacement and withdrawal therapy. When a systematic, consistent and caring approach, which includes education, behavioral counseling and psychological support, is paired with the prescribed and monitored use of nicotine replacement, abstinence rates that are several times greater than control or non-intervention quit rates are usually achieved.[10-14]

Behavioral change is a crucial part of the cessation program. It is vital that all recovering smokers learn how to deal with the social and psychological aspects of smoking cessation by planning their coping strategies in advance. To achieve long-term abstinence, these people must gain the necessary insights and skills and apply them to high-risk relapse situations. Patients who need a more intensive approach can find help through individual counseling.[3]

In Indiana, formal smoking cessation is offered by various organizations, e.g., the American Cancer Society, American Lung Association of Indiana and the Seventh Day Adventists, and by health care institutions, including local, hospital-sponsored wellness programs.

For the past three years, the primary focus of the Indiana University Nicotine Dependence Program has been the treatment of highly dependent smokers. During this period, this facility, located at the medical center in Indianapolis, has treated more than 200 highly dependent smokers. Biologically verified one-year abstinence rates

Table 1

The Fagerström Test for Nicotine Dependence*

Questions & answers	Score
How soon after you wake up do you smoke your first cigarette?	
≤ 5 minutes	3
6-30 minutes	2
31-60 minutes	1
≥ 61 minutes	0
Do you find it difficult to refrain from smoking in places where it is forbidden – e.g., in church, at the library, in a cinema?	
Yes	1
No	0
Which cigarette would you hate most to give up?	
The first in the morning	1
Any other	0
How many cigarettes per day do you smoke?	
≤ 10	0
11-20	1
21-30	2
≥ 31	3
Do you smoke more frequently during the first hours after waking than during the rest of the day?	
Yes	1
No	0
Do you smoke if you are so ill that you are in bed most of the day?	
Yes	1
No	0

*Scores of more than six generally are interpreted as indicating a high degree of dependence, with more severe withdrawal symptoms, greater difficulty in quitting and possibly the need for higher doses of medication. Heatherton TF, Kozlowski LT, Frecker RC, Fagerström KO: The Fagerström Test for Nicotine Dependence: A revision of the Fagerström Tolerance Questionnaire. *Brit J Addict*, 86:1119-1127, 1991.

in our program are 33%.

What is nicotine replacement and withdrawal therapy?
Nicotine replacement and withdrawal therapy is a pharmacologic approach to smoking cessation that uses nicotine-containing gum (Nicotine polacrilex) or transdermal-delivery nicotine patches of varying concentrations *(Table 2)*.[10-14] Nicotine replacement and withdrawal therapy is designed to reduce and control nicotine dosages, and thus, to manage cravings and withdrawal symptoms. Eighty percent of smokers who attempt to quit suffer significant withdrawal symptoms, including: a dysphoric or depressed mood; insomnia; irritability, frustration or anger; anxiety; concentration difficulties; restlessness; decreased heart rate; increased appetite or weight gain; and nicotine cravings. Appropriate use of the nicotine patch or gum significantly reduces these symptoms.

Smoking cessation rates during the first few months of treatment with transdermal nicotine preparations range from 20% to 40%, i.e., the use of patches doubles or triples long-term smoking cessation rates.[6] In highly dependent smokers, chemically verified nonsmoking rates at six weeks, one year and two years were, respectively, 60%, 39% and 34% in subjects who were given the 4-mg gum, as compared with 41%, 16% and 16% in those who were given the 2-mg gum.[14]

When people have stopped smoking and are using a nicotine patch or gum, they gain immediate benefits. Many nicotine patch or gum users report that they feel better almost immediately after they begin therapy. Eliminating exposure to carbon monoxide reduces the risk of angina or myocardial ischemia in patients with underlying coronary artery disease. The incidences of other vascular diseases or symptoms, including stroke and claudication, decrease soon after smoking ceases. In patients with reversible

Table 2

Characteristics of nicotine-containing patches and gum used in smoking cessation therapy[13]

NICOTINE PATCHES

Brand	Size	Dosage per patch*
Habitrol (Ciba-Geigy)	round 30 cm^2	21 mg/24 hrs
	20 cm^2	14 mg/24 hrs
	10cm^2	7mg/24 hrs
Nicoderm (Marion Merrell Dow)	rectangle 22 cm^2	21 mg/24 hrs
	15 cm^2	14 mg/24 hrs
	7 cm^2	7 mg/24 hrs
Nicotrol (McNeil)	rectangle 30 cm^2	15 mg/16 hrs
	20 cm^2	10 mg/16 hrs
	10 cm^2	5 mg/16 hrs
Prostep (Lederle)	round 7 cm^2	22 mg/24 hrs
	3.5 cm^2	11 mg/24 hrs

*Lower doses are recommended for patients weighing less than 100 pounds, light smokers (less than one-half pack per day) and those with cardiovascular disease and for tapering.

NICOTINE GUM

Brand	Nicotine content per piece	Dosage
Nicorette (SK Beecham)	2 mg	9 to 12 pieces/day max. 30 pieces/day
Nicorette DS (SK Beecham)	4 mg	9 to 12 pieces/day max. 20 pieces/day

obstructive lung disease, symptoms of cough, wheezing and dyspnea improve within a few days. With sustained abstinence, the risk of lung or other neoplasms and cardiovascular diseases gradually decreases (over several years) to approximate the comparable rates experienced by lifelong nonsmokers.

Why is nicotine used to treat a nicotine addiction?

The proper use of nicotine replacement therapy helps recovering, highly dependent smokers by: 1) significantly reducing and controlling withdrawal symptoms; 2) eliminating virtually all tobacco-related, toxic chemicals in the bloodstream and lungs, except for passive smoke; 3) offering a more manageable and sequentially paced treatment process, addressed from physiological, psychological and sociocultural perspectives; and 4) providing insights into the ritualistic, stimulus-response-reward cycle of smoking, which is deeply rooted in internal and external triggers and reward systems.

Who should use nicotine withdrawal therapy?

The most appropriate candidates for using nicotine transdermal patches or nicotine gum are adults or teenagers (age 18 and older) who:

- have a high motivation to quit;
- engage in heavy cigarette usage patterns (>25 a day);
- began smoking in early adolescence or childhood;
- previously engaged in unsuccessful, quit-smoking efforts;
- experienced severe symptoms of nicotine withdrawal in previous quit attempts;
- scored high on the Fagerström Test (>6) for Nicotine Dependence;
- feel strong and compelling smoking urges when cigarettes are unavailable;
- escalate their smoking levels to reduce either stress or negative moods; and
- have no medical contraindications or relative contraindications, e.g., hypersensitivity or allergy to nicotine; not addicted to nicotine; unwilling to stop using tobacco products; immediate post-myocardial infarction period; life-threatening arrhythmias; pregnancy; and other conditions or symptoms that may be worsened by nicotine replacement therapy.

Guidelines when prescribing nicotine gum

The safe and effective use of nicotine gum requires adherence to specific usage guidelines *(Table 2)*:

- Nicotine withdrawal therapy must preclude all other nicotine use (via cigarettes, cigars, pipes and/or smokeless tobacco).
- Nicotine gum usage requires specific instructions (it must be chewed correctly).
- Sufficient amounts of gum must be ingested to control withdrawal symptoms, and the nicotine gum must be used in conjunction with an effective educational, behavioral and psychological cessation program.
- Nicotine gum (2-mg) is recommended for use by light smokers (one dose in place of every 2 cigarettes), and 4-mg gum is prescribed for more highly dependent smokers (one dose for every 3-4 cigarettes).[12-14]
- Nicotine gum should be used on a regular schedule to prevent underdosing. When the medication is underused, withdrawal symptoms are not controlled, and relapse may occur. Highly dependent smokers need to use one piece of 4-mg nicotine gum every waking hour, especially during the first few weeks of treatment.
- No more than 30 pieces of 2-mg gum or 20 pieces of 4-mg gum should be used in any 24-hour period. Many patients need only 12 to 16 pieces of 2-mg gum daily.
- As each piece of this medication is taken, slow and intermittent chewing should occur for about 30 minutes and then the gum should be discarded. Rapid chewing releases nicotine too quickly, causing hiccups, a sore mouth and/or nausea. It also diminishes the intended effects of the gum use because most of the nicotine is swallowed, compromising its therapeutic benefit. When the gum is not being chewed, it should be "parked" between the cheek and teeth, and then it needs to be rechewed every few minutes to release more nicotine.
- No food or liquids, especially those that are acidic or hot, e.g., soft drinks, juices, coffee, tea, should be ingested during or immediately before using nicotine gum. If nicotine is swallowed with saliva or washed down with liquids, it will not be absorbed effec-

tively and it may cause heartburn and/or throat irritation.

- Patients need to use nicotine gum for a duration of four to eight weeks, and they should be weaned gradually from the medication.[6] Dosage scheduling can be delayed by increasing the length of time between therapeutic use or by decreasing daily consumption, i.e., eliminating one piece of gum every seven days, until less than two to three pieces are being used daily. At this point, the treatment can be discontinued.

What is the nicotine transdermal patch and how does it work?

Nicotine replacement therapy may be administered as nicotine polacrilex gum or as nicotine-containing adhesive transdermal patches.[6,10,11,13] After smoking is discontinued, the usage of a nicotine patch allows a steady absorption of nicotine through the skin, and it produces reduced predictable concentrations of this addictive substance in the bloodstream.

Throughout the day, the relatively stable blood nicotine concentration levels, which may vary from about one-third or more of the nicotine blood concentration produced by cigarette smoking, alleviate nicotine withdrawal symptoms. Recent studies indicate that underdosing patients, e.g., failure to achieve >50% to 75% or more of blood nicotine concentrations produced by cigarette smoking, results in higher relapse rates.[6,11,12,14]

Over several months, typically four to eight weeks, the patient is systematically weaned by continuing to reduce the dosage every two to four weeks.[6]

To successfully implement this smoking-cessation adjunct, clear and sequential use instructions must be followed throughout the cessation process. Additionally, a complete program of personal recovery includes the provision of psychological insights and skills training in behavior modification. Consistent follow-up is also a crucial part of the complete recovery process.

What is the most efficient method of nicotine patch application?

An unused (fresh) patch should be placed on the upper torso (chest or back) or on either arm at the same time each day. It should be left in place undisturbed and worn continuously for the next 24 hours. While this routine is typically carried out in the morning upon arising, the time of application depends upon individual needs and preferences. After the treatment has been initiated, however, it is important that the patient consistently follow that time schedule.

Patches should be applied to a fresh, clean, dry, nonhairy area of skin. While a naturally hairless part of the body is preferable, any shaven site can be used, if it is not nicked or irritated. The patch should be placed only on normal skin that is not routinely rubbed and chafed, injured, burned, broken out, cut or damaged in any way. Because the patches are designed to withstand exposure to water and perspiration, they can be worn while bathing, showering or swimming. If a patch loosens or falls off for any other reason, a new patch should be applied.

Other considerations before prescribing nicotine patches/gum?

Information regarding the use of nicotine replacement therapy may be obtained from recent medical literature, the *Medical Letter* or representatives of pharmaceutical companies. Before starting the therapy, have your highly dependent smoking patients gradually decrease (over a two-week period) their cigarette intake to no more than one pack (20 cigarettes) per day. This pretreatment reduction process lowers and stabilizes nicotine levels in the brain, significantly minimizes severe withdrawal side effects and increases the probability of long-term cessation.

Before they commit to this therapy, people who are pregnant or who have heart disease or other significant health problems (as listed in the prescribing information) will need medical clearance from their physicians. People who weigh less than 100 pounds or who smoke less than one-half pack (10 cigarettes) per day should start nicotine treatment with the lower dosage forms of gum or patch.

While it is important for smokers to choose their own quit date, they should plan for this event within two weeks. This commitment will reduce their tendency to procrastinate. Ideally, the person who is quitting will enlist psychological support from a spouse, family member or friend.

What about follow-up care?

Regular follow-up care throughout the withdrawal treatment period is critical if long-term abstinence rates are to be achieved. More intensive follow-up, including nurse counseling during the first

two weeks after quitting, has resulted in significant improvement in long-term abstinence.[6,11] To avoid receiving a nicotine overdose, patients must be reminded to completely abstain from cigarette smoking during the entire treatment process.

At specified intervals during the cessation process, some clinicians use a portable breath analyzer to measure carbon monoxide (CO) levels in expired alveolar air. This relatively inexpensive device, ranging in cost from about $800 to $1,400, is used to validate self-reported smoking abstinence. Its use has also been found to increase abstinence rates.

Aftercare at regular intervals can be accomplished by office visits, telephone calls and/or mail. Several studies have shown that aggressive and persistent telephone inquiries during the cessation process can materially aid quit rates. Also, patients should be encouraged to call if they encounter any cessation-related problems, either between these contacts or after the 10th week of therapy. Since highly dependent smokers are prone to relapse after smoking cessation, long-term follow-up and supportive care are recommended. Some highly dependent people who fail initial smoking cessation interventions can be referred to specialists who offer more detailed and intense cessation programs.

Summary

Smoking is a complex, addictive behavior that involves pharmacological, psychosocial and behavioral factors. Successful management of highly dependent smokers requires that clinicians use a structured, multifaceted patient management approach that includes the appropriate use of replacement and nicotine withdrawal therapy and intensive monitoring and long-term follow-up. ❑

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Smokeless tobacco usage: A growing and menacing addiction among Hoosier children and young adults

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Abstract

During the past 25 years, the consumption of chewing tobacco and moist snuff has been increasing in frequency, especially among the youth. Smokeless tobacco (ST) use among Indiana youngsters is higher than its use among youngsters nationally. More than 10% of current Indiana high school junior and senior female students report some ST usage. ST ingestion causes addiction and serious health consequences, including various forms of cancer and significant dental diseases. It is not a safe alternative to cigarette smoking. Nicotine levels in ST are very high, and ST intake is rapidly addicting. Tobacco companies have been accused of "graduating" youthful customers from flavored lower-nicotine "starter" products to forms that contain a more highly concentrated nicotine content. Clinicians should routinely ask children, teens and adults about ST use. Early intervention in youth who are experimenting with ST or using "starter" products may prevent addiction and disease. Physicians should be alert to the intraoral physical signs of ST use. To strengthen their tobacco intervention skills, physicians should acquire continuing education training regarding ST. ❑

Although the percentage of U.S. smokers has steadily declined during the past 25 years, the consumption of chewing tobacco and moist snuff has increased.[1-4] The addictive practice of tobacco "chewing, dipping and spitting" is also an increasing problem among youth in Indiana. Presently, it is especially popular among children and younger adults.

What is smokeless tobacco? How is it typically used?

In the United States, smokeless tobacco (ST) is commonly used in four forms:

- snuff: loose, fine-cut or coarse tobacco contained in a can or kept within a small teabag like pouch;
- chewing tobacco: the loose leaf variety, packaged in large, folding pouches;
- plug tobacco: compressed leaf tobacco, sold in a block or brick form; and
- twist: stemless tobacco leaves, lightly twisted and folded.

Another form, nasally sniffed tobacco powder, is commonly used in England, but seldom in North America.[1]

ST, in its various forms, may be plain or flavored, salted or scented. These products are commonly sweetened with maple sugar or molasses, adding a glucose or sucrose content that ranges between 5% and 15%.

The practice of snuff dipping consists of placing a "pinch," a "dip" or a "rub" of snuff (the amount that can be picked up by the thumb and forefinger) between the cheek and gum. The most common position to place snuff is in the mandibular labial mucosa (cuspid to cuspid). Tobacco chewing involves the similar placement of a "chaw," (a golf ball sized wad of leaf or plug tobacco) which is picked out of its pouch container, using the thumb, index and middle fingers, and sucked on. Users of this product can be identified by their extended cheek. A "quid" of tobacco is a cut or wad of tobacco that is held in the mouth for dipping (snuff) or chewing (leaf or plug). If a "chaw" of chewing tobacco is wrapped in bubble gum, a common practice among professional baseball players, it is called gumbacco.[1]

Typically, the tobacco quid is positioned in an area of the mouth and not moved from this location. As a result, the tobacco chewer does not actually "chew" per se. Many people dip or chew most of their waking hours, and some keep a quid in place for 24 hours a day. The average high school ST user dips or chews about three hours a day, while a college athlete typically uses about two to eight dips or chaws per day.[2,5] An experienced tobacco chewer can keep a quid of tobacco "alive" for about two hours.

The ST user must periodically spit out the excess tobacco juice that builds up in the mouth. Because some users of ST do not want to be seen spitting, they may swallow the tobacco juice, which can cause gastrointestinal problems. Others may use a disposable

Styrofoam or plastic cup in lieu of the old fashioned cuspidor.

Who is using smokeless tobacco? Recent national data compiled from several large-scale, U.S. studies indicate that 10 million to 12 million people are ST users.[6] The groups at highest risk are white youth and young adults, aged 10 to 30 years. Usage among young men, aged 18 to 24 years, is now greater than it is among any other segment of the U.S. population. Between 1970 and 1985, the prevalence of moist snuff intake has risen dramatically, with a 10-fold increase occurring among 16-to 19-year-olds.[7] In past decades, ST usage occurred primarily among middle-aged to older men. Today, however, dippers and chewers are considerably younger. Nationally, about 8% to 10% of children from the seventh through the ninth grades are using ST.[3] Initial ST intake typically begins in the preteen and early teen years. One state has reported that nearly 10% of third to sixth graders have tried ST.

The prevalence of ST use varies greatly in different regions of the country, with the lowest rates generally in the Northeast, in cities, and the highest in the South, in rural areas.[6] However, even among urban dwellers, there are pockets of high usage by children.[8] ST is consumed primarily by males in all ethnic groups, except among American and Canadian Indians and Alaskan natives, where the frequency of usage for both genders is similar, often exceeding 50%.

Prohibited behaviors tend to attract young people: any practice that is offensive or shocking to adults is usually appealing to adolescents and teenagers. As Glover has written:

"Adolescents, as a group, love whatever adults dislike and vice versa. The term spit tobacco may be offensive to adults; however, the most common response I hear among adolescents is 'cool.' I argue the term spit tobacco is much more appealing to young people than smokeless tobacco (ST), and in fact could create a new excitement for ST experimentation, rather than have the desired effect of decreasing ST use."[9]

Other reasons for this adolescent attraction are: 2) peer pressure, especially by those who participate in athletic teams (e.g., baseball, wrestling, football, rodeo events); 3) the promotion of these products by well-known, professional athletes; 4) the use of cleverly conceived advertising and the appealing display of ST products; 5) the convenience factor, which enables ST to be used where smoking is inappropriate or prohibited; 6) the young users' naivete concerning the harmful, addictive nature of smokeless tobacco; 7) the tobacco companies' widespread sponsorship of numerous, youth-oriented sporting events and entertainment and their distribution of mild ("starter") forms of snuff during such occasions.

Currently, one-third of all

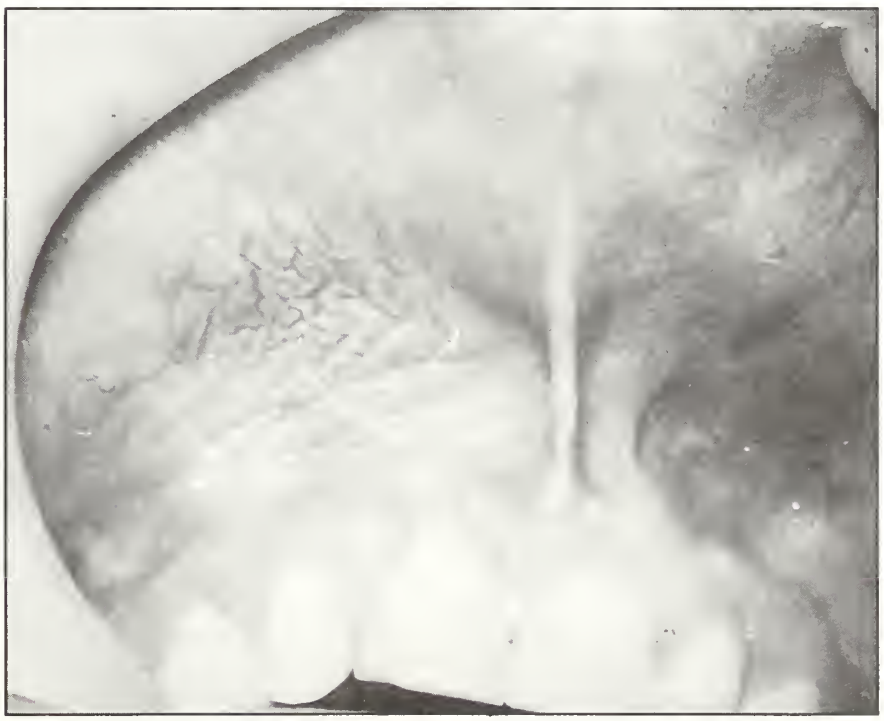

Figure: The labial area of this 21-year-old male, chronic snuff user reveals severe gum recession, bone loss and a typical snuff dipper's keratosis. Gum recession commonly occurs in the area that is immediately adjacent to the spot where a smokeless tobacco quid is habitually held. Recession occurs in about 30% to 60% of ST users.

varsity football and baseball players use smokeless tobacco. Young men have reported that, initially, they tried ST after the idea of usage had been sanctioned by their fathers, other male relatives and/or male friends. These youth stated that perceived social support was their most influential reason for starting this practice. The baseball-youth-tobacco connection and the availability of tobacco look-alike items (e.g., beef jerky and bubble gum, which are placed in snuff cans and chewing tobacco pouches) further enhance the acceptablity of ST use by children and adolescents.[1]

What is the status of ST use among the youth of Indiana?
Since the early 1980s, ST usage has been steadily increasing among Indiana youngsters. From 1984 to 1988, Christen and coworkers conducted ST surveys in six Indiana middle schools, located in both rural and urban settings.[8] These field surveys revealed that 21% of eighth grade boys were using ST, and 23% of this group were smoking cigarettes.

In April 1987, Lucas and Christen[8] studied 2,915 fifth, eighth and 11th grade boys and girls (ages 10 through 18) from 123 participating Marion County schools. For all three grades, a combined ST prevalence use rate for boys was 6%. (The national average for boys is 8% to 10%.) Only 1% of girls were ST users. The current ST usage rate of boys, by grade, was: 4.5%, fifth grade; 7.7%, eighth grade; and 11.5%, 11th grade.

In 1994, Bailey and colleagues[10] at the Indiana University Prevention Resource Center presented data on alcohol, tobacco and other drug use by 81,732 Indiana children and adolescents (half boys, half girls) from 250 schools throughout Indiana. More than 10% of the current female junior and senior students from this group had reported some use of smokeless tobacco, in contrast to the national average of 1% of U.S. girls who have ever used ST.[3] *(Table).*

Hoosier students in grades six through 12 continue to maintain their higher-than-national consumption rates of legal and illegal drugs, including both smoked and smokeless tobacco.[10]

What oral and systemic conditions are associated with ST use?
Although cigarette smoking poses a greater immediate danger to health than does the use of unburned tobacco, ST intake is a dangerous addiction with serious, and possibly deadly, health consequences.[3,6] Yet, tobacco companies continue to market ST as "the safe alternative to cigarettes." In reality, however, smokeless tobacco users are six times more likely than are non-users to develop oral cancer. Scientific evidence reveals a direct, causative correlation between chronic ST usage and an increased risk of developing oral, laryngeal, throat and esophageal cancers. Some people have developed mouth cancer after only a few years of using smokeless tobacco. Moreover, only about half of those who contract cancer of the mouth are still alive after five years.

The use of ST is positively associated with oral leukoplakia, a precancerous condition that is usually localized where the tobacco quid is habitually held.[6,11] Chemical analysis of moist snuff has revealed the presence of several potent carcinogens: polonium 210, polycyclic aromatic hydrocarbons and nitrosamines. In moist snuff, the nitrosamines are more highly concentrated than they are in chewing tobacco.[6]

Bad breath and the discoloring of teeth and dental fillings are common problems experienced by users of ST. Additionally, chewers and dippers have a higher prevalence of excessive wear (abrasion) on the biting and the grinding surfaces of their teeth. This condition is caused by the high levels of abrasive grit inherent in tobacco products. Tobacco use decreases the ability to taste and smell bitter, salty and sweet foods. Also, gingival (gum) recession, gingivitis, advanced periodontal destruction and loss of teeth have been reported to occur adjacent to the oral regions where the tobacco quid is held.[11]

Swallowing tobacco juices can have an adverse effect on the gastrointestinal system and especially on the stomach, causing ulcers.[3] The hemodynamic effects of ST include increases in heart rate and blood pressure due to the pronounced vasoconstrictive effects of nicotine. When pregnant women use moist snuff, the transplacental passage of nicotine may have toxic effects on the fetus.

No substantive evidence indicates that ST use improves athletic performance.[3] Smokeless tobacco advertisers have perpetuated the image of the confident baseball hero in action with his chaw of tobacco actively working for him.

How can we diagnose ST use?
Health care providers should routinely inquire about tobacco use because many children experiment with or regularly use tobacco products, often at an early age.

Thus, tobacco use can be documented in the medical record.

The evidence of the growing appeal of ST may be verified by the ever increasing number of worn, bleached round rings (the outline of the size and shape of a snuff can) appearing on the back pockets of jeans worn by young males throughout the country. This mark of distinction has become a symbol of virility, maturity and toughness among thousands of young Americans. Some youth have learned that if they place a snuff can in their back pocket and rub the edges of the can on a concrete surface, they can fray their jeans and give them the instant look of an ST user.

Patient tobacco-use patterns can change as habits and lifestyle change, as an addiction becomes established, and as decisions are made to stop, or as one switches from one form of tobacco to another. A knowledge of present ST usage among the young person can alert a health care provider to an increased probability that subtle tobacco-induced changes or frank lesions may be present within the patient's mouth.

By simply examining the mouths of our patients, we can observe the detectable, destructive signs of tissue damage adjacent to the teeth, gums and cheeks *(Figure)*. The direct and repeated contact of tobacco between the cheeks and gum tissues causes the gums to recede, exposing the bare roots of the teeth. This condition produces sensitivity to heat, cold, air and certain foods and chemicals. The inside of a dipper's or chewer's mouth will frequently reveal mucous membranes on the inner cheek that appear peculiarly wrinkled, thickened and white, similar to the hide of an elephant.

Table

Smokeless tobacco use by Indiana students in grades six through 12, boys and girls combined percentage, 1994

(Indiana Prevention Resource Center)[10]

Grade	6th	7th	8th	9th	10th	11th	12th
Daily ST use	0.6	1.7	2.6	4.2	5.2	6.4	7.0
Monthly ST use	4.0	7.5	10.6	13.3	13.6	14.6	15.5
Annual ST use	6.8	11.7	16.5	20.8	21.8	23.1	24.6
Lifetime ST use	9.0	14.9	20.1	25.8	28.0	31.0	33.9
National 1993 monthly ST use*	–	–	6.6	–	10.4	–	10.7

* 1993 National High School Senior Survey[10]

These leathery appearing areas, called leukoplakia, are believed to be precancerous.[11]

Is ST use a form of drug addiction?

Nicotine addiction is maintained by ingesting tobacco in any form – smoked or smokeless. Many clinicians believe that ST usage is more addicting than is cigarette smoking. For example, Glover reported a 2.3% success rate for a smokeless tobacco quit clinic but a 38% success rate at six months for cigarette smokers.[3] In one large-scale study, 21% of current smokeless tobacco users (12- to 18-year-olds) had unsuccessfully tried to stop four or more times.[3]

The intake of nicotine (and/or its metabolite cotinine) and nicotine blood levels in habitual users of ST are similar to those that are observed in habitual cigarette smokers.[2] An average sized dip of snuff, held in the mouth for 30 minutes, delivers as much nicotine as do four cigarettes. Recent studies have documented that the moist snuff brands on the U.S. market vary significantly in nicotine content, from 2.9 to 14.5 mg/g. As a result, a novice tobacco user may buy a "starter" ST product with a low bioavailability of nicotine (7.5 mg/g) that is geared to the nontolerant individual. Over time, this person will tend to progress unknowingly (i.e., "graduate") to an intermediate product (10.3 mg/g) and later to a product with a high bioavailability of nicotine (11.4 mg/g).[12] In fact, of the six popular moist snuff brands tested, free nicotine levels varied

from 7% to 79%.[12] As a result, users become increasingly dependent on nicotine as they progress from milder, flavored snuff to stronger, more addictive brands.

Can ST users be treated with nicotine replacement therapy?
According to the FDA, nicotine patches and gum can be prescribed for tobacco users who are 18 years of age or older. For the past three years, facilitators at the Indiana University Nicotine Dependence Program have been successfully treating a few adult ST users with 4 mg Nicorette®. For chewers or dippers, one positive aspect of nicotine gum use is that it replicates smokeless tobacco intake: nicotine gum is also ingested orally. Additionally, it helps to control the body's physiological urges and cravings for nicotine during the detoxification period of recovery, thus allowing the patient to deal with a range of social and psychological barriers to quitting.

What can physicians do?
About 70% of U.S. citizens see a physician at least once a year, while 63% see their dentist during this time period.[6] According to the National Cancer Institute:

"Medical and dental visits provide many opportunities for one-to-one discussion about tobacco use and health consequences and methods for quitting. Medical visits for prenatal care, child health, and upper respiratory or cardiovascular conditions provide special opportunities to discuss reasons for quitting. Both physicians and dentists can prescribe nicotine replacement therapy, when indicated. Follow-up visits for many routine dental services can also be used for follow-up of tobacco use interventions."[6]

Physicians need to watch for the intraoral, physical signs of ST intake and use this "teachable moment" to encourage cessation. They should adopt tobacco-free policies for their offices and help all staff members to remain or become non-users. To strengthen their tobacco intervention skills, both physicians and staff members can acquire additional training in this arena. The National Cancer Institute and voluntary health agencies offer these skill-building opportunities to health care providers.

Summary
In Indiana, among both children and young adults, ST usage is higher than is the national average. ST usage is an unsafe alternative to cigarette smoking because it can cause oral, laryngeal, throat and esophageal cancer, leukoplakia (pre-cancer) and a variety of dental conditions, including gingivitis, advanced periodontal disease and tooth loss. This type of nicotine ingestion is extremely addictive. Physicians need to watch for the intraoral physical signs of ST intake and routinely provide cessation advice to ST users. ❑

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Best practices for smoking cessation intervention for hospitalized patients

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Abstract

A multi-disciplinary workgroup of health care professionals and consumers has developed evidence-based best practices guidelines, an algorithm and clinical pathways for smoking cessation intervention for hospitalized patients. These practice recommendations can be adapted for implementation in managed care settings. ❑

Health Care Excel Inc. (HCE), which holds the Medicare Peer Review Organization (PRO) contracts for Indiana and Kentucky, is conducting an educational initiative on smoking cessation. HCE's quality improvement activities concentrate increasingly on the clinical aspects of patient care, with an emphasis on prevention. Efforts are underway to identify variation in processes and outcomes of clinical care and to utilize guidelines and best practices, in collaboration with health care providers, practitioners and consumers, to reduce variation and improve care.

The Centers for Disease Control and Prevention estimates of cigarette smoking prevalence and smoking-attributable mortality for 1990 show both Indiana and Kentucky to be in the highest quartile for the United States.[1] Cigarette smoking accounts for a substantial portion of all medical care costs and is recognized as the most important preventable cause of morbidity and mortality in the United States.[2]

Smoking cessation is important in both disease management and disease prevention. It results in immediate and major health benefits at all ages.[3]

Hospitalization has been described as a "window of opportunity" for a smoking intervention, when patients may be more receptive and motivated to quit.[4] The recent JCAHO requirement that smoking in hospitals be prohibited means that most smokers must quit during hospitalization, perhaps encouraging more prolonged quit attempts. Further impetus is provided by the emergence of managed care and by the momentum for hospitals to perform community health assessments and respond to identified problems.

Aim

HCE's aim is to document published smoking cessation best practices for hospitalized patients, to evaluate these best practices by piloting them locally and to promulgate the findings locally and nationally.

Process

HCE staff identified and obtained smoking cessation practice guidelines, treatment protocols and scientific evidence. The 1200 HSTAR (Health Services/Technology Assessment Research database of National Library of Medicine) and 950 PSYCHINFO abstracts (online database of Psychological Abstracts of American Psychological Association) were reviewed, and articles relevant to smoking cessation best practices were obtained. Existing guidelines, along with more recent scientific articles, were used to develop a best practices first draft.

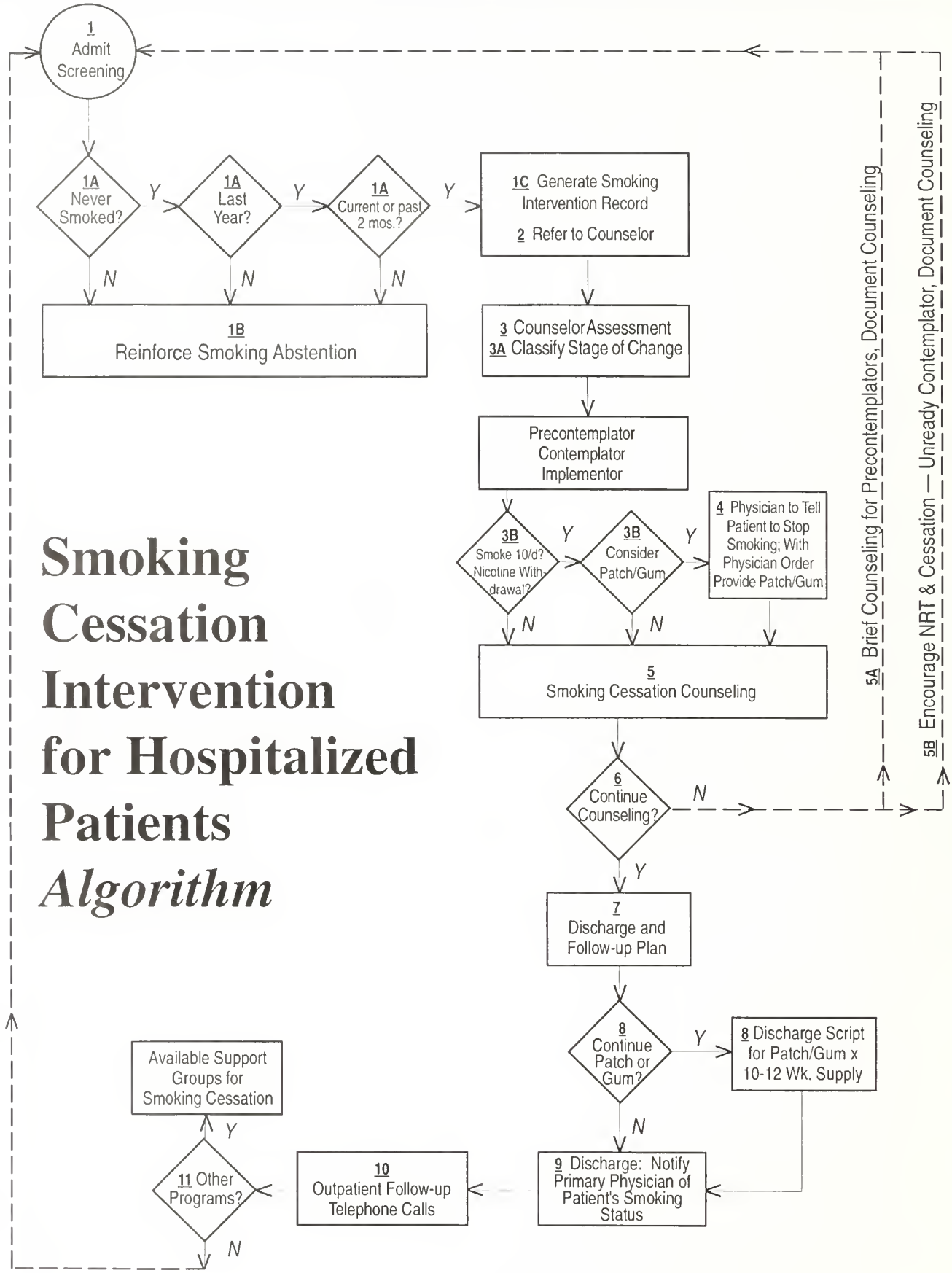
An expert multi-disciplinary workgroup from Indiana and Kentucky, representing hospitals, health departments and professional and consumer associations, revised and refined the best practices during a 2 1/2-day workgroup meeting. Clinical pathways and an algorithm, summarizing the model intervention, were also developed to facilitate implementation.

External reviewers' comments were solicited and incorporated into a second draft at a subsequent 2 1/2-day session. After extensive external review, a final draft was developed in January 1996, with piloting beginning shortly thereafter. The effects of the pilot are being evaluated through pre- and post-intervention medical record abstraction.

Specific model: Smoking cessation intervention for hospitalized patients

An algorithm summarizing the intervention is shown in the *Figure*. A stages-of-change model, supported by extensive research, classifies smokers according to

Smoking Cessation Intervention for Hospitalized Patients *Algorithm*



cessation readiness stages: precontemplation, contemplation, preparation, action (or implementation) and maintenance.[5] The model requires:

1. screening at admission for smoking status;
2. referring smokers to a designated smoking cessation counselor;
3. classifying smokers and providing stage-appropriate brief counseling;
4. physician advice to stop smoking; prescription of nicotine replacement therapy (NRT) during hospitalization and for one week post-discharge for patients without contraindications;
5. counseling according to stage-of-change;
6. multiple brief contacts relating to smoking by members of the health care team during hospitalization;
7. developing a discharge and follow-up plan, discussing it with the patient and including relapse counseling and self-help materials;
8. providing a prescription for an additional 10- to 12-week supply of NRT, if the patient wishes;
9. notifying the patient's primary care provider of these activities;
10. telephone follow-up at three days, two weeks and one month post-discharge, preferably repeated at six and 12 months; and
11. referring appropriate patients to outpatient smoking intervention programs.

Improvements expected during the pilot of this intervention include documented increases in completed smoking assessments; identification of smokers' stage-of-change; smoking cessation counseling; appropriate management of nicotine withdrawal symptoms during hospitalization; increases in completed smoking assessments; understanding by patients and significant others of strategies for remaining smoke-free; referrals to outpatient smoking cessation programs; prescriptions of NRT after discharge; and post-discharge follow-up. The expected outcome is an increase in the percentage of patients who report remaining abstinent at follow-up. ❑

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The Indiana Prenatal Substance Use Prevention Program: Its impact on smoking cessation among high-risk pregnant women

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Abstract

The Indiana Prenatal Substance Use Prevention Program (PSUPP) was established in 1988 to help pregnant women quit cigarette smoking as well as alcohol and drugs. PSUPP directors implement the Screen, Intervene and Follow-up (SIF) model to assess substance use and provide services to help clients stop smoking.

During fiscal year 1995, almost 25,000 individuals were impacted directly or indirectly by the PSUPP. Of these, 1,334 pregnant women were screened for substance use by PSUPP. Of the 987 women identified with a known substance use risk factor, 42.4% (418) were high-risk smokers (more than five cigarettes per day) and 9.9% (98) were medium-risk smokers (smoking between one and four cigarettes per day). PSUPP directors counseled their high/medium risk smokers an average of four times during their pregnancy.

The PSUPP appears to be effective in getting high-risk smokers to change their smoking behavior during their pregnancy. Approximately one-half (49.9%) of the 516 high- or medium-risk smokers decreased or quit smoking while participating in the PSUPP.

When surveyed, about 80% of the PSUPP participants stated that the knowledge they gained through PSUPP relative to tobacco use was "very helpful." Only two-thirds of the PSUPP clients responded that they "strongly agreed" with the statement that tobacco use causes babies to have a lower birth weight. While pregnancy may provide the "teachable moment" for women who smoke, more attention needs to be placed on making women more aware of the risks involved with smoking during pregnancy. ❑

Cigarette smoking has been linked with adverse pregnancy outcomes since the 1940s[1] and is the most important cause of low birth weight in developed countries.[2] Cigarette use during pregnancy can also cause spontaneous abortion, fetal and perinatal mortality, abruptio placenta, placenta previa, premature and prolonged rupture of placental membranes, preterm delivery, and sudden infant death syndrome (SIDS). Although most women start smoking in their teens, the majority of female smokers are in their childbearing ages, 15 to 44 years old.[3]

Since 1991, there has been little change in the smoking rates among pregnant women in Indiana as seen in the *Table*.[4-6] More than 32% of the women in Indiana who smoke are of childbearing age (25 to 34).[7]

The Indiana Prenatal Substance Use Prevention Program (PSUPP) was established in 1988 and is administered by the Indiana State Department of Health (ISDH) and funded by the Indiana Division of Mental Health. PSUPP's primary goal is to prevent birth defects, low birth weight, premature births and other problems associated with prenatal substance use including tobacco, alcohol and other drugs. PSUPP's objectives are to:

1. identify high-risk, chemically dependent pregnant women; provide perinatal addiction prevention education; promote abstinence; provide referrals to treatment services; and conduct client follow-up;
2. provide public education on the hazards to a fetus of maternal use of alcohol, tobacco and other drugs; and,
3. facilitate education programs for professionals on how to identify high-risk chemically dependent women and provide necessary counseling.

Most PSUPP clients are referred by the Maternal and Child Health program (MCH) and the Women, Infant and Children (WIC) clinics. These women are screened for current use of tobacco, alcohol or drugs. PSUPP staff contact the at-risk clients and initiate counseling. PSUPP directors implement the *Screen, Intervene and Follow-up (SIF)* model

designed to assess substance use during pregnancy and provide/coordinate needed services. The assessment identifies the patient as being at low, medium or high risk.

To improve the management of high-risk pregnant women who are smoking, PSUPP staff provide health education services in Lake, Allen, Vigo, Pike, Spencer, Dubois and Warrick Counties. These interventions include helping the client to reduce her risk level on her own, as well as referring the client to a peer support group, outpatient treatment or an inpatient treatment facility. PSUPP directors also provide substance use education through local media campaigns and substance use education to providers through training sessions.

The client intervention has three components:

1. During the first visit, the hazards of smoking cigarettes to the unborn baby and the importance of quitting smoking are discussed. An educational/counseling plan is developed for the client at this time.
2. The program provides support and reinforcement. Clinic encounter records are stored in the client's chart to remind physicians and nurses to review progress, give a strong "no use" message to the client and provide positive reinforcement of her efforts.
3. On subsequent visits, one-on-one educational/counseling sessions and referrals are based on individual assessments.

In addition to specific client interviews, the PSUPP provides community-wide information regarding prenatal substance use. Information is disseminated through presentations, seminars and workshops, health fairs, brochures and the media. The PSUPP staff impacted directly or indirectly nearly 25,000 persons in fiscal year 1995.

The purpose of this paper was to study the impact on smoking rates and awareness of smoking risks among pregnant women participating in a community-based prenatal substance use program.

Methods

During fiscal year 1995, a set of survey forms and data entry software were used to collect client information at all PSUPP sites. Client information included the following: demographic and clinical data, utilization/visit patterns, tobacco use history and status at entry into the PSUPP and upon termination. A client satisfaction survey was conducted on a random sample of all PSUPP clients to determine the perceived level of risk of tobacco use, the number of visits with PSUPP staff, client knowledge and satisfaction with the program. The effectiveness of the PSUPP interventions was assessed by comparing self-reported smoking at baseline (entry into the PSUPP) and at the end of the pregnancy and PSUPP intervention.

The smoking levels of the women were self reported and not verified using carbon monoxide or serum cotinine measurements. Intentional and unintentional errors are possible when clients are asked to recall past and present tobacco use. Some of the PSUPP clients would have stopped smoking without the intervention of the program staff. However, without a control or comparison group of pregnant smokers, it is not possible to estimate the proportion who stopped smoking due to the program.

Results

Risk level: There were 987 women who were identified as substance users (74%). Of those, 418 were high risk smokers (42.4%) and 96 were medium-risk smokers (9.9%). Clients were classified as high risk if they smoked more than five cigarettes per day. Medium risk was defined as clients who smoked fewer than five cigarettes per day. Clients were classified as low or no risk if they reported no current tobacco use.

Demographic characteristics:

Race: Of the 513 identified as being high- or medium-risk smokers and whose race was known (race was unknown for one case), 80% (412) were white, 11.8% (61) were black, 7.4% (38) were Hispanic, and 0.6% (2) were classified as "other."

Age: While the mean age of the smokers was 22, 0.4% were 14 years of age or less; 9.1% were ages 15 to 17; 28.6% were 18 to 20 years old; 29.6% were between 21 and 24 years of age; and, 32.3% were 25 years of age or older.

Marital status: Of the 508 at-risk smokers where marital status was recorded (marital status was missing for six cases), the majority (75.4%) were unmarried.

Education level: Since 27% of the at-risk smokers were 18 years of age or less, it would be expected that about a quarter of the PSUPP clients would have less than a high school education based on their age distribution alone. However, among at-risk smokers where the number of years of education was

listed, nearly half (48.1%) had not graduated and 7% had eight or less years of education. On the other hand, 10.5% reported some college or other post-secondary education.

Historic cigarette use: Nearly two-thirds (61.8%) of all the 1,334 women who were screened indicated they had smoked sometime in their lives. Of the 514 at-risk smokers, nearly one-third (30.1 %) reported that they began smoking before they were 15 years old.

Program intervention: The PSUPP directors worked directly with all smokers to assist them in efforts to stop smoking; 280 clients (54.5%) were also referred to on-site or external smoking cessation programs during their pregnancy. Forty high-risk smokers were referred to smoking cessation programs after delivery.

Of the 116 (88.5%) satisfaction survey respondents who reported the number of PSUPP visits, 88 (75.9%) reported they had visited two or more times with the PSUPP director to discuss their use of cigarettes, alcohol or drugs. Thirty-four (29.3%) of the clients had made two visits, and 32 (27.6%) had visited three times. Twenty-two respondents (19.0%) had visited four or more times. PSUPP directors contacted their high/medium risk smoking clients an average of 3.8 times.

Outcomes: Of the 989 clients who terminated from the PSUPP due to childbirth, 31.9% were smoking at the time of termination compared to 32.3% in 1993 and 43.9% in 1992. A comparison of the smoking rates for those who terminated from PSUPP in FY 1995 with the rates when women entered the program (some entered the program during FY 1994) found that 49.9% of those women who were smoking at the beginning of the program reported that they decreased or terminated their smoking; 70.3% of those smoking more than five cigarettes per day (high-risk clients) cut down or quit smoking.

Sixty-four (48.9%) of the 131 respondents to the satisfaction survey admitted using tobacco; of these, 35 (54.7%) had stopped, 23 (35.9%) had cut down and five (7.8%) planned to reduce their use of tobacco due to the information and help they had received from the program. Only one individual (1.6%) admitted she planned to continue her use of tobacco after her baby was born.

The satisfaction survey asked questions about the knowledge gained through PSUPP related to tobacco use. Respondents indicated that the substance abuse information was "very helpful" (79.7%), they knew "very much more" about tobacco (76.2%), they "strongly agreed" that tobacco can harm an unborn baby (80%), and they "strongly agreed" that smoking causes babies to have lower birth weights (66.2%). More than one-half (55.7%) of the respondents reported that they received information that showed them why prenatal care is important, and 58% felt they had received help that was increasing their general health status. A majority (67.2%) felt that they were given information that would help them have a healthier baby.

Table

Smoking rate (%) among women who deliver in Indiana, 1991-1993[4-6]

Amount of smoking	1991	1992	1993
One pack/day or more	7.9	7.3	7.1
Five - 19 cigarettes/day	12.9	12.4	12.0
Fewer than five cigarettes/day	4.6	4.7	4.5
Non-smokers	74.6	75.6	76.4

Discussion

The results of this study indicate that the PSUPP intervention was somewhat effective in helping clients reduce or stop smoking during pregnancy and that this intervention was associated with an increased awareness and sensitivity by clients to the harmful effects of tobacco use during pregnancy.

These results are consistent with previous studies that show a high proportion of pregnant women are interested in cessation programs and are motivated to quit.[8] These studies underscore the need for intervention during the "teachable moment." Pregnancy may be a critical time to promote sustained changes in smoking behavior among women.[9]

Our data indicate, however,

that a significant fraction of pregnant smokers in PSUPP do not quit. The reasons for this are not clear. The results from the client satisfaction survey indicate that approximately one in five pregnant women in PSUPP do not "strongly agree" that tobacco use can harm their unborn child; one in three do not "strongly believe" that smoking affects the baby's birth weight. These data show a need for more persuasive methods in health education. PSUPP is one of many community programs to help women stop smoking during pregnancy. Practitioners are encouraged to refer their patients who smoke to such programs.

In conclusion, this study suggests that a community-based, prenatal substance use program intervention may decrease smoking rates and increase awareness of smoking risks during pregnancy. Still, a significant proportion of clients continue to smoke and deny the risks of tobacco use are real and apply to their pregnancy. As with abuse of other substances, reasons supporting continued use must be considered. This provides direction for future efforts by PSUPP. ❑

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Tobacco education in low-literacy individuals

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Abstract

Approximately 20% of the adult population in the United States have low-literacy skills. The subpopulations with the highest incidence of low literacy are nearly identical to those with the highest prevalence of tobacco use. Low-literacy smokers are more likely to underestimate the risks related to tobacco use, have less social pressure and support to quit smoking, may experience more life stress and consequently rely more heavily on nicotine use for stress reduction and require more assistance in developing a sense of self-efficacy. This indicates a need to modify smoking cessation methods of counseling, content and selection of educational materials for the marginally literate. Currently available low-literacy materials are listed, and suggestions for adjusting or developing materials are made. ❑

Low literacy refers to the 40 to 44 million American adults, almost one in five, who have poorly developed skills in reading, writing, listening and speaking. These are people who are unable to read and comprehend directions that most of us take for granted, such as instructions on a bottle of vitamins. When confronted with complex pamphlets, booklets or instructions, the marginally literate person easily becomes overwhelmed.[1] This presents a challenge to health education providers, as methods of instruction and advising must be adjusted to meet the needs of this low-literacy population.

Measures of literacy are not interchangeable with measures of intelligence. There are people with low-literacy skills in every walk of life and at every socioeconomic level. There is a preponderance, however, of poor literacy skills among the following groups: low income, inner-city inhabitants, older Americans, blue collar workers, the unemployed, and those with less than a high school education. These are the same subpopulations who have the highest smoking prevalence in our country.[2]

Generally, less formal education implies a greater need for patient education. This seems obvious, but studies reveal that in practice physicians talk more to patients who ask questions, typically those with a higher education.[3] Marginally literate patients may not grasp the implications of a newly prescribed treatment because of limited anticipatory skills and problem-solving abilities. There is an increased need for interaction, but the patient's silence is often misinterpreted as understanding and acceptance. This leads to an inability to follow medical advice, and the patient may later be unfairly labeled as noncompliant.

Today, we rely heavily on written materials to supplement oral instructions and information for patients. Unfortunately, there is a wide disparity between the literacy capabilities of the reader and the level at which most educational materials are prepared. Meade and Byrd[4] analyzed the readability of smoking cessation materials and found that most are written at a level above grade 9, and many at a scientific or professional level. This complicates the ability of the health care provider to supply adequate instruction and explanation.

In a follow-up, randomized controlled study, the same investigators demonstrated a significant increase in comprehension for subjects receiving smoking materials written at a fifth grade level compared to those who received the same information written at a 10th grade level and controls who received no information, (13% and 18% increase, respectively).[5] Materials adjusted for literacy are effective.

General considerations in counseling low-literacy smokers

Counseling may be more time consuming for low-literacy patients due to the reasons previously mentioned and the inability of the patient to pursue independent learning activities. Using a designated office worker as the smoking counselor may be considered. Establishing an effective office smoking cessation program with this format is outlined by the National Cancer Institute as a part

of its "How To Help Your Patients Stop Smoking" program.[6]

Group sessions are a second alternative for better time management in smoking cessation counseling. Highly interactive meetings, with group members responding to questions rather than didactic presentations, are most effective. As group cohesion builds, motivation increases.[1] The smoking cessation classes offered through Wishard Memorial Hospital in Indianapolis consist of three weekly two-hour meetings. Attendance is difficult if the sessions are more frequent or if they are spread over longer periods of time. Often the participants use public transportation and must arrange for changes in work schedules and child care. By requiring several sessions, difficulties in attending begin to outweigh the benefits of participating.

There are several differences between high- versus low-literacy smokers that have implications for adjusting interventions. Low-literacy smokers are more likely to underestimate the individual risk of tobacco use and the resulting need to quit.[7] It is critical in motivating this group to personalize the message to stop smoking by relating it to current health status or concerns, i.e., cough, shortness of breath, child's asthma.

With a higher prevalence of tobacco use in the low-literacy population, there is less social pressure to quit.[8] In fact, quitting smoking may even be perceived by others as threatening, and consequently, there is often little social support for stopping. Health care providers must be readily available and able to supply this needed support. Quitting smoking is extremely difficult, and an enthusiastic advocate can be pivotal in a successful outcome.

Many smokers engage in tobacco use to relieve stress. Job strain and the pressures of daily living may be greater among those subpopulations associated with low literacy,[2] and addressing stress reduction is another important element in the overall program of smoking cessation. Because problem-solving skills may be inadequate, the health care provider must assist in personalizing or individualizing stress reduction methods to the patient's own circumstances. For example, a harried mother of toddlers may not be able to understand the use of guided imagery for stress reduction, but she can play music, sing, dance or read with her children. The essential point is that help is needed in identifying a variety of simple stress relievers that can replace smoking.

Another consideration in managing low-literacy tobacco-dependent individuals is the importance of maintaining a positive supportive attitude toward the patient. Although this is essential for all smoking assistance programs, it may be more crucial for those with deficient

Table 1

Commonly distributed pamphlets analyzed for readability via the Fry Graph

Publication	Reading level
"Facts About Cigarette Smoking" American Lung Association Publication #0171	15th grade
"Facts About Nicotine Addiction and Cigarettes" American Lung Association Publication #0182	12th grade
"Facts About Secondhand Smoke" American Lung Association Publication #0006	11th grade
"Yes, You Can Quit Smoking For Good!" American Lung Association Publication #0480	Sixth grade
"Clearing The Air" National Cancer Institute Publication #941647	Sixth grade

literacy skills.[1] Commonly, minimally competent people have already suffered many frustrations, embarrassments and failures. A judgmental or demeaning manner may increase stress and alienate the patient. Interference from stress, anxiety or other distractors can affect attention and comprehension and should be addressed and eliminated or minimized before teaching/counseling sessions.

Applying techniques to the low-literacy population

Guidelines for effective implementation of health interventions for low-literacy patient education have been developed.[1] These guidelines incorporate theories of education and behavior and provide practical suggestions for adapting materials and methods to those with special needs. At Indiana University Medical Center's health care facilities, these recommendations have been applied to the National Cancer Institute's "How To Help Your Patients Stop Smoking" program for use in both individual counseling sessions and in formal group smoking cessation classes. This program involves four health care provider activities that begin with the letter "A" - ask, advise, assist and arrange.

Ask – Smoking status is entered with the vital signs on patient encounter forms and is determined at each appointment. A smoking history is obtained through interview.

Advise – A direct statement advising quitting is made. This should be phrased in terms relevant to the patient. Instead of an abstract concept such as "to reduce the risk of lung cancer," try to convince the patient using a concrete, familiar idea such as "to help you live to enjoy your grandchildren."

We assess readiness to stop tobacco use by inquiring if the patient has thought about quitting, wants to quit and if he/she has attempted to quit smoking before. We record information in our encounter notes rather than asking the patient to complete an assessment form. Limiting the amount of written material confronting the patient is less threatening.

Assist – Behavior is more likely to be adopted if it is perceived as achievable.[9] Because many smokers have attempted to quit in the past and have been unsuccessful, smoking cessation is often considered unachievable. Further, the low-literacy population is likely to have suffered many inadequacies in the past, which may have created an expectation of poor results. Break the smoking cessation process into many small steps, so the participant may experience interim successes and build confidence in the process of this behavior change.

In our smoking counseling, we begin with congratulating the person because he or she has actually arrived at or consented to an appointment for initial smoking counseling. We try to build on all accomplishments and learn from any failings. Reinforcing all achievements, such as having tried smoking cessation before, reducing the number of cigarettes smoked per day, increasing physical activity or identifying alternative behaviors for stress reduction, builds confidence and a sense of competence and self worth. As the patient begins to feel empowered, the locus of control will shift from the nicotine addiction to the individual.

Assistance in setting a quit date is necessary. Often patients will agree to stop smoking and set that same day as the quit date. Because they are not yet prepared with adequate skills or information for this endeavor, a more realistic date must be considered.

Nicotine addiction evaluation, using the Fagerström tool,[10] is helpful in determining the need for nicotine replacement therapy. This is particularly true in the African-American population, as a higher nicotine dependence is demonstrated with relatively fewer cigarettes consumed.[11] This means that the number of cigarettes smoked per day may not accurately reflect the level of nicotine addiction. Providing this information is helpful to the African-American patient as he or she may feel frustrated that smoking cessation is so difficult even with a relatively "light habit."

Most of our patients prefer and benefit from nicotine replacement therapy, and patches usually are prescribed. Instructions for nicotine gum can be confusing to low-literacy patients, and reverting to regular gum chewing can be difficult to avoid. Written instructions for nicotine patches are adjusted for low literacy and are carefully reviewed with the patient. A contract is signed that delineates the quit date and the patient's intention not to smoke while using nicotine replacement. CIBA Corp., through its patient support program, provides Habitrol™ patches for our indigent patients and those without insurance who are unable to pay.

Arrange – At the first appointment, quitting strategies are discussed, the decision to quit is reinforced, and the suggestion of tapering is made. At the second

appointment, usually one to two weeks later, a two-week supply of patches or gum is provided. Concerns and questions are addressed, and all progress thus far is supported. At appointment three, progress is reviewed, problem solving is employed for any lapses, and two more weeks of replacement therapy is provided with appropriate refills. Subsequent visits and telephone follow-up are as needed. Patients are called at six months to assess smoking status.

Smoking cessation materials: Suggestions for preparation

There are few self-help materials available for the low-literacy population. *Table 1* lists a sampling of the most frequently distributed smoking cessation pamphlets at IU Medical Center and Wishard Memorial Hospital and health clinics. The reading level was analyzed using the Fry readability graph, a commonly used tool.[1] *Table 2* outlines three publications that have components appropriate for our target population.

Because we have been unable to find booklets that satisfactorily match our population in literacy level, ethnicity or socioeconomic status, we are developing our own. Doak et al have made many recommendations, with rationales, for the preparation of locally produced materials, which are briefly summarized in the following paragraphs. These materials can be very effective because they more closely reflect the community and incorporate familiar faces and speech, which increases understanding.

The use of audio and video media is advised. Simple audiotapes may be used to reinforce information. These tapes should be only five to 10 minutes long and supplemented with a handout. The patient can easily operate a tape player and rewind and relisten if certain concepts are not well understood. This can conveniently be implemented in the clinic or office waiting room with the use of ear phones. Information such as patch placement, relaxation techniques, chemical versus behavioral addiction or healthy snacking are some examples of possible taped topics.

Videotaping an actual smoking cessation class that has been personally conducted can be useful for individual viewing. VCRs can require a higher level of expertise to operate and do not lend themselves as easily to replay as tapes. Often, though, this medium is more interesting to the patient.

Locally produced handouts are also effective provided a few principles are followed in their preparation. When developing educational materials for low-literacy patients, provide the

Table 2

Smoking cessation publications with special attributes for unique subpopulations

Publication	Comments
"How To Quit Cigarettes" American Cancer Society Publication #2604-LE	Reading level = fourth grade. Clear "survival message." Culturally diverse. Depicts blue collar workers. Effective illustrations. Conversational writing style.
"Special Delivery ... Smoke Free" American Cancer Society Publication #88-IC-No.2422.01-LE	Reading level = fourth grade. Developed for pregnant smokers. Workbook format with many activities appropriate for all types of smokers. Clear "need to know" message. Effective illustrations. Conversational writing style. Most interactive publication located to date.
"Pathways to Freedom" Fox Chase Cancer Center, Philadelphia, PA. Distributed by the American Cancer Society	Reading level = sixth grade. Developed specifically for African Americans. More than "need to know" message, but excellent adaptation for targeted population. Conversational style. Effective illustrations.

smallest amount of information possible to get the central idea across. This allows the patient to focus on the "survival message." The low-literacy adult needs to know enough about his or her condition to understand the importance for continuity in treatment and the consequent required behavior. Extraneous information can be confusing and cause the real message to be lost.

The text in the handouts should be in simple, conversational language and in the active voice. The vocabulary should be basic with possibly new or difficult words defined. This style is easier to relate to and, therefore, more easily understood.

Printing is done in lower case lettering which, because of more detailed configurations, is easier for poor readers to recognize than capital letters. Black lettering on white or yellow paper is most visible, which is important if the patient is reading in a poorly lit area. Ideas that need to be stressed can be underlined or printed in bold, not spelled out in all capitals, as capital letters are less well recognized by the marginal reader.

Illustrations should be simple, not distracting, and should add to the understanding of the content. They should be beside the written text rather than above or below, as the lower literacy reader loses his place easily. Pictures are best as plain ink drawings of realistic figures with whom the patient can identify. Caricatures can be confusing and may be interpreted as condescending. Elaborate pictures are also confusing and distracting. Even drawn stick figures can be more effective than photos or detailed drawings. The patient can better relate to pictures of anatomy when it is depicted in the context of the body. Again, accuracy is essential. Lower literacy patients view things as concrete and understand drawings exactly as they are drawn.

Anecdotally, we have found that people of all literacy levels prefer our uncomplicated medical instruction and materials. This is confirmed in the research findings of Ley and colleagues.[12] Succinct, clear "survival message" information is better understood and easier to follow. Thus, these guidelines are equally effective in preparing materials for all populations.

Our challenge

Very little prepared information is available for the low-literacy population. Why do those with the highest prevalence of smoking and the greatest need for information and support have the fewest resources for smoking cessation? The tobacco companies have not overlooked attending to these subpopulations. Notice the billboards, store advertising and promotional items in less affluent neighborhoods. Messages are clear, succinct and targeted specifically to the surrounding community. The principles of effective communication for those with low-literacy skills are being used by our adversaries. We health care professionals need to demonstrate the same proficiency in preparing positive health messages for tobacco dependent, low-literacy people. ❑

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Indiana laws regarding tobacco control

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A recent report by the Centers for Disease Control and the National Cancer Institute on state tobacco legislation shows significant variation in tobacco control laws among states.[1] As of June 30, 1995, there were 1,238 state laws regarding tobacco control in effect. Despite this fact, however, these laws are not adequately protecting our most vulnerable population, the youth of America. Since approximately 90% of regular users of tobacco (cigarettes or smokeless) become dependent on nicotine before the age of 20, the relative ineffectiveness of laws limiting youth access is troublesome. Underage buyers can purchase tobacco from retail outlets about 73% of the time and from vending machines about 96% of the time.

The following is a brief summary of state laws on tobacco control, including Indiana legislation.

Youth access
The sale and distribution of tobacco products is prohibited in all states, including Indiana, to people under the age of 18. In Indiana, the distribution of tobacco to a person under the age of 18 as a means of promoting or advertising the product is prohibited. The penalty for violating these laws in Indiana is a Class C infraction and carries a minimal fine. Penalties for first violations to business owners, managers or clerks range from fines of $10 to $50 in 11 states to fines of up to $1,000 or more in four states.

Vending machines
Thirty-two states, including Indiana, have restrictions on youth access to vending machines that contain tobacco products. In Indiana, vending machines are restricted to workplaces, licensed facilities and private clubs accessible only to people over age 18 or to locations where the machine can be operated only by the owner or an employee who is at least 18.

No state has banned the sale of tobacco products through vending machines. In 12 states, vending machines are banned from areas accessible to young people. Only 23 states have penalties for first violations of restrictions on the location and supervision of tobacco vending machines. By 1993, 161 cities and counties in the U.S. had passed ordinances that partially or completely ban tobacco vending machines;[2] none of these cities or counties were in Indiana.

Excise taxes
The United States has among the lowest tobacco excise taxes in the world. State taxes on cigarettes vary from 2.5 cents per pack in Virginia to 75 cents per pack in Michigan. The national average is 31.5 cents. Washington state increased its cigarette tax to 81.5 cents per pack effective July 1, 1995. Indiana has an excise tax per pack of 15.5 cents. Recent efforts in Indiana to increase the tax were unsuccessful.

One of the most successful strategies to reduce tobacco use among youth is to increase the price of tobacco products. It has been estimated that an increase of $2 per pack in cigarette taxes would result in 7.6 million fewer smokers in the United States.[3] Tobacco companies aggressively fight any efforts to increase tobacco taxes.

Advertising
Only nine states restrict tobacco advertising. These laws generally limit advertising near schools and on public property. Indiana has no laws restricting tobacco advertising.

Private workplaces
Indiana has no private workplace laws that restrict smoking. Twenty states and the District of Columbia limit smoking in private work sites. California has either no smoking or separate ventilation for smoking areas in private work sites.

Public places
Indiana restricts smoking to designated areas in government buildings, public schools and classroom buildings at state educational institutions. In 1987, largely due to a 12-year effort by Rep. John W. Donaldson, Indiana passed the Indoor Clear Air Act. This allowed the banning of smoking in public arenas during sporting events. Indiana has no laws that restrict smoking in day care facilities or restaurants. In 1993, Indianapolis prohibited smoking in government buildings; jails and public housing were exempt from this law.

Many local communities in

Indiana and the United States have adopted local ordinances restricting smoking in public places and access of underage youth to the sale of tobacco products.[2] The tobacco industry has adopted an aggressive program in support of preemptive state laws that prohibit local jurisdictions from having tobacco control ordinances that would be more restrictive than state law. In 16 states, laws preempt local governments from enacting ordinances more restrictive than state laws related to the sale of tobacco products to minors.

Successful tobacco control in Indiana, particularly aimed at preventing tobacco dependence among our youth, will require commitment and increased involvement of health professionals, significant increase in public education, and both state and local legislation. Of historical interest is that in Indiana in 1912 the percentages of boys of different ages who were using "white coffin nails" were: 12 years, 15%; 13 years, 20%; 14 years, 38%; 15 years, 29%; 16 years, 57%; and 17 years, 71%.[4] Indiana law in 1912 (Section 1641, First Revised Statutes) stated that the dealer who sells to a child under 16 any kind of tobacco may be prosecuted for his act. Today, some 84 years later, the magnitude of adolescent and teen use of tobacco products is similar to 1912, and yet children today can buy tobacco illegally approximately 80% of the time.

Elsewhere in this issue of *Indiana Medicine* (see page 132), data are presented that indicate widespread public support for legislative restrictions on youth access to tobacco and for increases in tobacco excise taxes. The public is becoming aware of recent alarming data that show increased use of tobacco products by adolescents and teenagers.[5] Unfortunately, most states are unable to mount serious tobacco control legislative initiatives because of lack of expertise and funding. The tobacco industry is remarkably well-funded and organized to either squelch proposed tobacco control legislation or initiate legislation favorable to tobacco interests. Several states, however, including Florida, Mississippi, Minnesota and Massachusetts, have developed bold and innovative legal tobacco control strategies.[6] Recently, the National Cancer Institute awarded a $950,000 grant to Northeastern University School of Law and the Tobacco Control Resource Center Inc. to develop effective legal strategies in support of tobacco control interests of states, municipalities and private parties.[7] These efforts may provide the necessary legal tools to address the overwhelming public mandate for restrictions on youth access to tobacco products.

Legislative efforts would also be enhanced by grass-roots coalitions of private and public organizations. In Indiana, for example, organizations including the Indiana State Medical Association; the Indiana Hospital Association; public and private universities and colleges; voluntary health organizations such as the American Lung Association of Indiana, Indiana chapters of American Heart Association and American Cancer Society; the Indiana State Health Department including Project ASSIST; the Indianapolis Alliance for Health Promotion; Indiana Chamber of Commerce; local and state government; citizens groups; and local law enforcement agencies, all must come together and coordinate effective tobacco control education and legislative initiatives. The health and future of the youth of Indiana depend upon our resolve to address this critical public health problem. ❑

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Ethical responsibilities of physicians in tobacco control

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Tobacco has been much in the news recently. In mid-July 1995, the American Medical Association reported that internal documents from Brown and Williamson Tobacco Corporation "'offer detailed and damning evidence' that the industry covered up the addictive and cancer-causing impact of cigarettes for three decades."[1] On Aug. 10, 1995, President Bill Clinton declared smoking to be a "pediatric disease" and announced his intention to allow the Food and Drug Administration (FDA) to regulate tobacco in an attempt to protect children from nicotine addiction. That same day several major cigarette manufacturers responded by filing suit against the FDA, claiming the agency lacks proper authority to regulate tobacco.[2] On Oct. 19, 1995, R.J. Reynolds Tobacco Company placed a prominent ad in the *Washington Post* and *The New York Times* newspapers that rejected the proposal to curb teen smoking through FDA regulations, citing the fact that all 50 states already forbid tobacco sales to minors.[3] Several times each week the network nightly news carries some bit of information on this "war" regarding tobacco; medical journals and the popular press frequently contribute to the debate.

Tobacco is under siege in the United States and for clear and convincing reasons. Despite tobacco industry vague claims to the contrary, the following facts are well established. Smoking is responsible for 90% of lung cancers in men and 79% in females, with an overall rate of 87%.[4] In 1987, lung cancer achieved the dubious distinction of surpassing breast cancer as the number one cause of cancer-related death in women.[5] Smoking accounts for 30% of all cancer deaths, and for nearly one-in-five of all deaths in the United States. The American Cancer Society estimates that smoking is related to about 419,000 deaths in the United States each year; the World Health Organization estimates that about three million people worldwide die each year because of smoking-related illness. In addition to lung cancer, tobacco use is closely associated with cancer of the mouth, larynx, pharynx, esophagus, pancreas, cervix, kidney and bladder.[6]

The litany of ills related to tobacco is not limited to cancer. Smoking also is responsible for 80% of chronic lung disease, including emphysema, a major cause of suffering and death.[7] Smoking accelerates atherosclerotic plaque development in arteries and greatly contributes to heart disease and stroke. The American Heart Association estimates that nearly one-fifth of deaths due to cardiovascular disease are attributable to smoking. A smoker's risk of heart attack is more than twice that of a nonsmoker's, and his/her risk of sudden cardiac death is two to four times greater than a nonsmoker's.[8] Smoking also increases a person's risk of peripheral vascular disease, especially when coupled with other health problems, such as diabetes.

In the face of such overwhelming evidence of the devastating consequences of smoking and smokeless tobacco use, what should be a physician's response, to individual patients and to society, with respect to public policy?

Traditionally, the physician occupies the roles of healer and teacher. Indeed, the word "doctor" means to teach, presumably first the patient at hand, and then perhaps students, colleagues and others. The doctor's duty is to learn the truth (facts) about the medical condition, the diagnosis, prognosis and therapeutic options, and to communicate these to the patient. This professional obligation reflects the moral principle of beneficence: to do or promote good, to prevent harm. This positive obligation is often coupled with an even more stringent injunction, that is to "do no harm," the principle of nonmaleficence. Until 30 years or so ago, physicians were quite comfortable making decisions based primarily on their own notions of what was in the patients' best interests, and the paternalistic model of medical care prevailed.

The doctor's knowledge, skills and desire to do what is best for the patient are balanced by the patient's own wishes. The principle of autonomy, or right of self-determination, was first articulated by Justice Benjamin Cardoza in 1914 with the words, "Every human being of adult years and sound mind has a right to determine what shall be done with his own body."[9] Robert Veatch of the Kennedy Institute of Ethics has written much about the patient-physician relationship and

medical ethics. He describes autonomy as a "... negative right, or a liberty right. It generates a right of noninterference."[10] Put another way, autonomy respects the rights of adults who are competent ("of sound mind") to "... formulate their own plans without interference from others."[11] And in the context of medicine, autonomy recognizes patients as moral agents, free to accept or reject medical therapy or advice.

Autonomy has gained ascendance as a moral principle in the past 25 years, and for the most part autonomy has become a trump card of sorts, medically and morally. Courts have supported this pattern; indeed, it is difficult to imagine many scenarios now in which physician beneficence would take precedence over a patient's autonomy. This, it seems, is the heart of the matter, the situation in which an autonomous patient who is engaged in any risky behavior such as smoking, sky diving, auto racing, overeating or sunbathing, presents himself to the doctor who is morally and professionally committed to benefiting that patient.

A third principle – the principle of justice – needs consideration also. Broadly speaking, justice is concerned with what is due or owed to others, including the patient, and what would be a fair distribution of burdens and benefits. Discussions of "justice" often involve money, resource allocation, insurance coverage and the like. In the context of patients who are involved in risk-taking behavior, the notion that an autonomous patient should bear the cost, financial as well as physical, of a "freely chosen" behavior is reflected in many insurance rating policies as well as other public policy suggestions.

Notions of justice must also acknowledge that certain groups suffer more profoundly the effects of tobacco use than do other groups. Specifically, African-American men have a higher mortality rate and lower five-year survival rate for lung cancer than do white men and all women.[12] Within the patient-physician relationship, justice requires that the physician be knowledgeable about the patient and his life, his behaviors whether healthy or not, freely chosen or otherwise. The physician must clearly and compellingly inform the patient of the risks and logically expected outcomes of whatever the unwise activity (habit) is. In addition, the physician should offer advice, support and referral, if necessary, to help the patient alter the behavior.

Some might argue that a physician, perhaps in order to underscore the seriousness of the risk, might refuse to treat or to continue to treat a patient. For example, a dermatologist may feel that it is appropriate to discharge a sunbathing patient, or an internist may fire a patient who is a recalcitrant alcoholic. There are many other examples, a few of which may be understandable. But putting aside legitimate questions of what constitutes truly "free choice," refusing to treat such a patient seems at worst to reject the notion of respect for persons, and at the least to break faith with the patient, to diminish the fiduciary relationship between patient and physician. And it is hard to see how withdrawal by a physician from the care of that patient could benefit the patient, the insurance pool or any other segment of society.

There are some important limitations on personal autonomy and on the physician's duty to respect it; considering justice issues helps illuminate these. One person's autonomy and personal pursuit of life plans ought not harm or injure another's life or health. Specifically, in view of the harm cigarette smoke may do to a nonsmoking child or fetus, a physician has a more stringent obligation to educate and counsel a patient to quit smoking. The same sort of risks exist for nonsmoking spouses or partners, office workers, even passers-by on the street. But, if the latter are adults, they are free to make their own choices. Children are not, and thus physicians have an increased obligation to protect them, that is, to act paternalistically. That being said, it does not follow that a physician should refuse to care for the patient.

Neither physicians, loving family members, insurance rates, non-smoking airplanes, restaurants, offices or other public health measures can force an individual to change his/her behavior. There is evidence, however, that some public policies and opinions may influence habits, reflected by the fact that per capita cigarette consumption decreased 37% from 1973-1992 in the United States. And a recent article in the *Archives of Internal Medicine* entitled, "An Analysis of the Effectiveness of Interventions Intended to Help People Stop Smoking," concluded with a strong statement of advice to physicians: "Clinicians should take the time to give a brief period of advice on quitting smoking to

all their patients who smoke. In terms of saving lives, such advice constitutes a cost effective use of their time. Additional encouragement, and support through the early stages after stopping smoking, improve the likelihood of success on average ..."[13] One could argue from a purely practical standpoint, as well as from a nonconsequentialist perspective (autonomy and justice), that a physician ought to use every patient visit as an opportunity to educate, cajole, support and fully care for a patient who is smoking or engaging in some other risky behavior.

In conclusion, physicians who care for patients who smoke or engage in other seriously risky behaviors face a difficult dilemma: how to respect the individual's choice while at the same time fulfill one's professional responsibility to the patient. Balancing respect for the person's autonomy with the desire to prevent the harm inherent in tobacco use requires patience, insight and wisdom. Consideration of issues of justice, not only for the patient but also for others, may help guide the physician in the relationship with the patient. The physician is obligated to provide the patient with the best possible information regarding the behavior at issue, and faithfully to encourage and support the patient as he/she struggles to change the behavior or to live with the consequences. ❑

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Tobacco curriculum for medical students, residents and practicing physicians

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Abstract

Smoking and other tobacco exposure have been recognized for several decades as the most significant preventable factors in premature morbidity and mortality. Most physicians believe they should address the issue of tobacco intake with their patients but are rarely provided with adequate training or support to do so effectively. Recent research identifies several ways in which physicians can have substantial impact on patient smoking rates, by use of very brief patient-centered counseling and by prescribing nicotine replacement therapies. This paper describes a model curriculum for medical students, residents, medical faculty and community physicians that can be integrated into current training and teaching practices. The goal is to create a "preventive" intervention perspective to smoking that is effective, practical, efficacious and cost-effective. ❑

Smoking is the primary cause of premature morbidity and mortality in the United States today. Other types of tobacco exposure, including chewed tobacco and passive smoking, also account for significant risk.

From a public health perspective, advice from physicians is one of the most potent messages that encourages smokers to quit. While intensive smoking treatment programs have higher success, only about 10% of smokers ever attend them, while 70% of smokers see a physician annually. However, surveys show that generally fewer than 60% of patients report "ever" being told by a physician to stop smoking. It has been 15 years since formal recommendations were made by the AMA that physicians routinely address smoking with their patients.[1] According to a recent national survey,[2] 70% of internists in practice believe that counseling about smoking was "worth" a separate office visit, yet about the same number stated they "never" made such appointments. Most physicians reported feeling frustrated and ineffective in addressing smoking when they do so at regular visits. But even among primary care patients, exit surveys suggest that only 20% to 40% of smokers are asked about smoking on a regular basis.

It is time for this pattern to change. Simple, highly effective techniques are now available for physicians to use in smoking intervention, but adequate training is important. This training must be provided starting in medical school and then be supported by creating a "culture of prevention." Adequate training must include training in how to implement intervention, not just information regarding the adverse health effects of smoking.

The effectiveness of physician intervention

Physicians often report feeling ineffective in helping patients to stop smoking. However, multiple studies show that physician input can increase long-term quit rates in a general patient population up to almost 20%, an 8- to 10-fold increase over people trying to quit completely "on their own" and a statistic of tremendous public health significance. While a quit rate of 20% may still seem low, stopping smoking is a very personal decision and is often a long-term process. Even the most intensive group smoking programs rarely show long-term quit rates over 40% – and that is with highly motivated smokers. Therefore, physicians need to keep realistic expectations of what is achievable.

Extensive research supports the effectiveness of physician intervention.[3,4] Simply advising patients to quit will increase the natural quit rate from about 2% to 4%-6%. Providing self-help materials increases this rate further; planning a follow-up visit is even more effective, perhaps because it conveys the seriousness of the physician regarding the issue. Randomized clinical trials, many funded by the National Cancer Institute,[4] testing more comprehensive interventions including brief behavioral counseling and nicotine replacement therapy (NRT), showed extended abstinent rates of 10% or more, with up to 20%-30% quit rates for

motivated smokers who returned for follow-up visits and made extended use of NRT.

NRT, including the nicotine patch and nicotine gum, has been shown to be effective in multiple studies, but is another tool currently underutilized by physicians. Evidence is strong that these products help substantially in the initial phases of quitting. Smoking entails both physiological dependency and psychological dependency. Even lighter smokers (one-half to one pack/day) benefit from NRT for the addictive aspects of smoking, while they learn new habits necessary to become "non-smokers." NRT treats the physiological dependency; when combined with brief counseling, self-help materials and follow-up, the psychological dependency is also addressed.

Is smoking intervention cost-effective for physicians to provide? In fact, when compared to other health care expenditures, smoking intervention is highly cost-effective.[2,5] Computer models suggest that even the briefest physician counseling – one resulting in an increase of extended quit rates of under 3% – saves almost $4 in health care costs per dollar spent, while smoking intervention with hospitalized patients may save more than $70 per dollar spent. Smoking intervention is thus one of the most effective uses of preventive health care dollars.

Training for effective physician-delivered smoking intervention

The long-term goal of training in smoking intervention is to establish both the necessary attitudes and the skills among physicians, so that all patients who smoke are virtually ensured of receiving appropriate smoking intervention. Attitudes about the risk associated with smoking have changed considerably; however, belief that physicians could and should play a role in smoking intervention lags behind. One reason may be that skills to provide such intervention are still not being systematically taught to physicians. Such skills include how to counsel smokers, as well as how to set up an office system which reminds and supports the physician to do so. The goal is for intervention to become part of standard practice and be implemented in the same systematic and thorough manner as hypertension management is currently.

To achieve this, training needs to start in medical school and be continued and reinforced up through post-graduate and continuing medical education. Therefore, attending physicians and preceptors with whom medical students and residents interact must also value smoking intervention, or the impact of teaching medical students may be lost. Staying abreast of advances in smoking intervention also needs to be established as a high priority with state medical boards, medical associations and medical benefit agents.

The fundamental components of a tobacco curriculum address four areas of competency:

1. knowledge of the health risks of smoking and benefits of quitting;
2. knowledge of tobacco use as a complex biopsychosocial phenomenon;
3. skills in providing counseling intervention; and
4. setting up an office system and/or team to facilitate intervention.

Much of the teaching in these elements can be incorporated into already existing training structures. More focused and intensive training can generally be accomplished in 2 1/2 to 3 hours, and then reinforced during regular clinical precepting.

Medical students – A recent survey conducted by the AMA[6] showed that while smoking is addressed as part of a required course by 57% of medical schools, it is rarely emphasized. When it is addressed, it has been primarily as a major health risk for such diseases as lung cancer, pulmonary disease and coronary vascular disease. Even here, it may be underemphasized; the Cancer Education Survey[7] of U.S. medical schools reported that prevention and cessation of smoking was the least likely cancer prevention lecture topic to be offered. The importance of smoking as a risk factor for other diseases, including diabetes, stroke and peptic ulcer, or in obstetric or surgical care, is even less likely to receive attention. The health benefits of quitting also are not well reviewed. Much less common is training that addresses nicotine as an addictive substance or tobacco use as a complex psychosocial behavior. Finally, formal training in how to address smoking clinically, other than to identify tobacco use status, is usually not provided. Barriers to such training may be the competition for time from other courses and limited patient access during the first two years.

Information regarding tobacco and smoking as significant medical risks can be integrated into a wide range of the medical courses.

Table 1

Example of patient-centered counseling

Basic health advice: "I notice that you are a cigarette smoker. Smoking is harmful to your health. In many cases, the harmful effects of smoking can be reversed. As your doctor, I must advise you to stop smoking." (Personalize to patient's medical condition.)

Motivation to stop smoking
✓ How do you feel about being a cigarette smoker?
✓ Have you thought about stopping?
✓ What reasons would you have for stopping?
✓ What do you understand about your health reasons to stop smoking?
✓ What do you like about smoking? *(Important question for a committed smoker.)*

Past experience with stopping smoking
✓ Have you ever stopped smoking?

<u>Yes</u>
* When was the last time?
* How did you stop?
* Any problems?
* What helped you?
* How did you feel?

<u>No</u>
* Have you made any other changes?
* When? Any problems?

Anticipated problems with stopping
✓ What would be possible problems or barriers to stopping?
✓ Assess appropriateness for nicotine replacement therapy (NRT).

Possible resources or solutions
✓ What could you do to help with these problems? (Assess willingness to use NRT.)

Developing a plan
✓ Would you be willing to develop a plan to stop smoking?

<u>Yes</u>
* Provide written agreement with quit data.
* Provide prescription for NRT if appropriate.
* Review factors that may interfere with plan.
* Schedule return visit/phone contact in one to two weeks.
* Provide follow-up as indicated.

<u>No</u>
* Would you be willing to cut down on your smoking?
* If yes, make written agreement.
* Provide self-help material.

Smoking as a risk behavior can be readily introduced into problem-based learning or other modes of presenting case models. While a "smoking case" is important for demonstrating an intervention model, all medical cases should establish smoking status; the proportion of current smokers among these cases should then reflect actual prevalence (about 29% in Indiana). Smoking can also be addressed in behavioral science teaching, where it provides a good model for introducing processes of addiction, socially-influenced health behavior, and the role of motivation in behavior change.

Smoking also provides a good model for brief patient-centered counseling for all preventive behavioral issues and for some milder psychiatric problems.

While various models exist,[7] one successful approach, developed at the University of Massachusetts Medical School as part of an NHLBI Preventive Cardiology Academic Award (PCAA) program,[8] starts by including smoking as part of a personal risk factor screening assessment upon entry to medical school. The class risk profile is then used as data in clinical correlation sessions in physiology, biochemistry and preventive medicine. First year students also take a Physician, Patient and Society course that includes medical interviewing, communication skills and clinical problem solving, using patient simulators, small groups and role-playing. This course explicitly addresses the role of physicians as educators and the medical interview as a vehicle for helping patients to alter disease-related behaviors. One session is devoted to practicing the patient-centered counseling model using smoking as the focus. In parallel to this segment, the effects of smoking on the lungs are introduced in their physiology course. The emphasis in the medical interviewing component is on the patient, using basic and time-efficient counseling skills to focus the interview, decrease defensiveness, increase motivation and provide information specific to the patient's needs. When counseling is presented as a style of interacting with the patient and as a skill that can be learned, the students are much more receptive to engaging in this approach.[9] Because a brief (five to 10 minutes) model for counseling is taught, this counteracts the perception that such counseling necessarily entails an extended length of time. *Table 1* shows the patient-centered counseling protocol that is taught, which addresses five areas (motivation, past experience with stopping, anticipated problems, possible solution, and making a plan). Second year medical students participate in an Epidemiology and Preventive Medicine course that further emphasizes the relationship of risk factors to disease prevention and biological factors as only one aspect of a complex biopsychosocial environment.

During the third- and fourth-year clerkships, a special emphasis is placed on utilizing the medical student to address behavioral risk factors during both inpatient and outpatient rotations. Preceptors model brief office and bedside counseling to address risk factors, thereby reinforcing a prevention-oriented medical culture. During the fourth year, students also may participate in electives in preventive and behavioral medicine, cardiac rehabilitation and preventive cardiology.

Postgraduate training – Because smoking intervention is not yet well integrated into usual clinical practice, residents and fellows may receive little systematic reinforcement or modeling to address this issue. Other barriers include an emphasis on technology and intense time pressures that often characterize residency programs. Addressing smoking also may be compartmentalized as relevant only to primary care or pulmonary medicine.

As in medical school, addressing tobacco risks and smoking intervention can be integrated into other training components: attending rounds, morning report, outpatient chart review, grand rounds, journal clubs, M&M conferences. Since residents come from a range of backgrounds, providing specialized training at teaching conferences may be necessary.

The patient-centered counseling protocol, mentioned above, was first developed and shown to be effective at the University of Massachusetts Medical School as part of a randomized clinical trial.[9,10] Primary care patients who were provided brief counseling and prescription of NRT by medical residents were about three times more likely to be abstinent six months later than were patients receiving only basic advice to quit smoking. With 10 years of experience to date, a highly successful structure for providing training to residents has been developed and integrated into the regular curriculum.

The basic components are structured to accommodate residents entering with a wide range of previous knowledge. Two one-hour teaching conferences are scheduled, which all incoming interns are required to attend, to teach the basic elements of patient-centered smoking intervention, as outlined above and in *Table 1*. Extra sessions accommodate all residents' schedules. Role-playing and videotaping of each resident are used. The residents then are provided with individual 20-minute tutorial sessions for feedback during their clinic time, with extra sessions as needed. This training has been widely accepted by residents; it provides specific guidelines for how to address smoking and increases confidence in doing so.

Furthermore, all faculty in general medicine and family medicine also have participated in the training, either with new groups of residents or in special training sessions. As more experience was gained, specific barriers were identified and systematically addressed, as outlined in *Table 2*.

A similar training program developed for pediatric residents at the University of North Carolina[11] was based on the NCI Smoking Cessation Guide (see Resource List). They found that those residents who engaged in role-playing exercises and were taught in a clinic setting gained more benefit than residents who attended only teaching conferences. However, ongoing reinforcement was not built into the training, and patients' reports of having received intervention increased only marginally.

Another successful model for dissemination of training to residents and current faculty involves providing intensive training to a few core faculty who teach this to fellow faculty and residents, and who serve as resources in developing an ongoing curriculum.[12]

For training purposes, commitment of the residency director, outpatient clinic directors and chief residents is important. As providing smoking intervention became an expected part of clinical care, faculty involvement at UMMS also increased, and providing the necessary teaching and precepting became a recognized and valued teaching responsibility for primary care and behavioral medicine faculty. Institutional involvement on the part of staff is also important to keep supplies of self-help materials available, as is support in approving forms that facilitate tracking of patients and serve to prompt the practitioner to intervene. In the future, coordinating smoking intervention efforts among a team of professionals, initiated by the physician, but including nurses or health educators, may provide the most effective treatment.[3]

Community physicians – Practicing physicians most often cite inadequate time, lack of compen-

Table 2

Overcoming training barriers

Barriers	Suggestions
No awareness or support for training program from directors.	Elicit support of curriculum, residency and clinic director/ department chair and the chief resident. Provide information and set up individual meetings.
Competing demands for faculty instructor's time.	Negotiate with department chair for this training as a part of teaching responsibilities. Present benefits of training to the institution, department and residents. Recommend how to incorporate training into existing curriculum.
Faculty instructor not confident in ability to carry out training.	Consult with colleagues in other programs with experience in risk-factor counseling. Re-read materials and role-play with colleagues. Elicit support of psychology staff to assist with training.
No available extra time for training.	Use existing training conference time: morning report, residents' teaching conference, grand rounds, clinic chart review.
Low turnout at conferences.	Offer food. Page residents on day of program. Send reminders and reinforce benefits to residents.
Difficulty in finding time to assess students' and residents' skills.	Use precepting or clinic time, case review time or rounds.

sation and a general sense of ineffectiveness as reasons to not provide smoking intervention. Physicians may be smokers themselves or fear that they will lose patients if they address smoking. Although CME workshops on smoking intervention and extensive materials published by the National Institutes of Health are increasingly available, these approaches have not yet had much impact on physician behavior. The proportion of smokers who receive even basic intervention advice from physicians remains low, particularly among patients who do not yet have a smoking-related diagnosis. Even in family practice settings, most physicians consistently address smoking only if patients have obvious smoking-related disease. Providing intervention to hospitalized smokers is much less common. For example, a recent study in two Indiana hospitals documented very little use of NRT and almost no provision of counseling.

Providing systematic advanced training in smoking intervention to community physicians is more difficult than providing training within the medical school environment. Passive learning, which characterizes most continuing education venues such as conferences, seminars or physician education materials, is markedly ineffective in changing behavior, as documented in a recent review of CME strategies.[13] Office-based training using "academic detailing," workshops that involve extensive role-playing and office follow-up, availability of patient education materials and reminders produce much more effective learning.

Physicians can also support efforts within their local practice community by linking with such voluntary health organizations as the American Cancer Society, American Lung Association or the American Heart Association; providing workshops themselves; lobbying for reimbursement or HMO coverage for providing intervention; and setting guidelines to change expectations for smoking intervention within inpatient settings. ❑

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Suggested resources

Epps RP, Manley MW: *NCI Guide to Preventing Tobacco Use During Childhood and Adolescence*. Rockville MD:NCI, 1990.

Glynn TJ, Manley MW: *How to Help Your Patients Stop Smoking – A NCI Manual for Physicians*. Washington DC; USDHHS, PHS, NIH; 1990. NIH Pub. 909-3064.

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In Patients Over 65

2.5 mg Starting Dose

Hypertension plus concomitant disorders?

First, do no harm.

PLENDIL–No significant adverse effect on many parameters of cardiac function:

- no effect on cardiac contractility* (no negative inotropic effect).
- no effect on cardiac conductivity.*
- no effect on cardiac output.*

PLENDIL – Few known drug interactions.†

PLENDIL – More than 1 billion patient days worldwide.[1]

The most common unwanted effects are peripheral edema and headache.

24-hour control

Plendil®

(felodipine) *Tablets, 2.5 mg, 5 mg, 10 mg*

Selected as baseline therapy for The HOT Study[2]—a landmark trial.

* In clinical trials in hypertensive patients without clinical evidence of left ventricular dysfunction, no symptoms suggestive of a negative inotropic effect were noted; however, none would be expected in this population. Although acute hemodynamic studies in a small number of patients with NYHA Class II or III heart failure treated with felodipine have not demonstrated negative inotropic effects, safety in patients with heart failure has not been established.

† See PRECAUTIONS section of full Prescribing Information.

Please see brief summary of Prescribing Information on the next page.

THE AMERICAN HEART ASSOCIATION PHARMACEUTICAL ROUNDTABLE

ASTRA MERCK

153705 12/95

For hypertensive patients with concomitant disorders.

24-hour control

Plendil®

(felodipine) Tablets, 2.5 mg, 5 mg, 10 mg

Selected as baseline therapy for The HOT Study[2]—a landmark trial.

Starting dose: 5 mg once a day.
2.5 mg once a day for patients over 65 or those with liver impairment.

Most commonly dispensed dose[3]:
5 mg once a day.

Recommended dosage range:
2.5 mg to 10 mg once a day.

PLENDIL should be swallowed whole and not crushed or chewed.

References:

1. Data on file, DA-PLN9.
2. Hansson L. The Hypertension Optimal Treatment Study (The HOT Study). *Blood Pressure.* 1993; 2:62-68.
3. IMS *NPA Plus*™ May 1995 prescription data; Data on file, DA-PLN8.

BRIEF SUMMARY

PLENDIL® (FELODIPINE) EXTENDED-RELEASE TABLETS

Before prescribing, please consult full Prescribing Information.

CONTRAINDICATIONS: Hypersensitivity to this product.

PRECAUTIONS: ***General: Hypotension:*** May occasionally precipitate significant hypotension and rarely syncope. May lead to reflex tachycardia which in susceptible individuals may precipitate angina pectoris. (See ADVERSE REACTIONS.)

Heart Failure: Although acute hemodynamic studies in a small number of patients with NYHA Class II or III heart failure treated with felodipine have not demonstrated negative inotropic effects, safety in patients with heart failure has not been established. Caution therefore should be exercised when using PLENDIL® in patients with heart failure or compromised ventricular function, particularly in combination with a beta blocker.

Elderly Patients or Patients with Impaired Liver Function: Patients over 65 years of age or patients with impaired liver function may have elevated plasma concentrations of felodipine and may respond to lower doses of PLENDIL; therefore a starting dose of 2.5 mg once a day is recommended. These patients should have their blood pressure monitored closely during dosage adjustment of PLENDIL. (See CLINICAL PHARMACOLOGY and DOSAGE AND ADMINISTRATION sections of full Prescribing Information.)

Peripheral Edema: Peripheral edema, generally mild and not associated with generalized fluid retention, was the most common adverse event in the clinical trials. The incidence of peripheral edema was both dose- and age-dependent. Frequency of peripheral edema ranged from about 10 percent in patients under 50 years of age taking 5 mg daily to about 30 percent in those over 60 years of age taking 20 mg daily. This adverse effect generally occurs within 2-3 weeks of the initiation of treatment.

Information for Patients

Take PLENDIL tablets whole; do not crush or chew. Patients should be told that mild gingival hyperplasia (gum swelling) has been reported. Good dental hygiene decreases its incidence and severity.

Drug Interactions: Beta-Blocking Agents: A pharmacokinetic study of felodipine in conjunction with metoprolol demonstrated no significant effects on the pharmacokinetics of felodipine. The AUC and C_{max} of metoprolol, however, were increased approximately 31 and 38 percent, respectively. In controlled clinical trials, however, beta blockers including metoprolol were concurrently administered with felodipine and were well tolerated.

Cimetidine: In healthy subjects pharmacokinetic studies showed an approximately 50 percent increase in the area under the plasma concentration time curve (AUC) as well as the C_{max} of felodipine when given concomitantly with cimetidine. It is anticipated that a clinically significant interaction may occur in some hypertensive patients. Therefore, it is recommended that low doses of PLENDIL be used when given concomitantly with cimetidine.

Digoxin: When given concomitantly with PLENDIL, the pharmacokinetics of digoxin in patients with heart failure were not significantly altered.

Anticonvulsants: In a pharmacokinetic study, maximum plasma concentrations of felodipine were considerably lower in epileptic patients on long-term anticonvulsant therapy (e.g., phenytoin, carbamazepine, or phenobarbital) than in healthy volunteers. In such patients, the mean [illegible] under the felodipine plasma concentration-time curve was also reduced to approximately six percent of that observed in healthy volunteers. Since a clinically significant interaction may be anticipated, alternative antihypertensive therapy should be considered in these patients.

Other Concomitant Therapy: In healthy subjects there were no clinically significant interactions when felodipine was given concomitantly with indomethacin or spironolactone.

Interaction with Food: See CLINICAL PHARMACOLOGY, *Pharmacokinetics and Metabolism* section of full Prescribing Information.

Carcinogenesis, Mutagenesis, Impairment of Fertility

In a two-year carcinogenicity study in rats fed felodipine at doses of 7.7, 23.1 or 69.3 mg/kg/day (up to 28 times the maximum recommended human dose on a mg/m² basis), a dose-related increase in the incidence of benign interstitial cell tumors of the testes (Leydig cell tumors) was observed in treated male rats. These tumors were not observed in a similar study in mice at doses up to 138.6 mg/kg/day (28 times the maximum recommended human dose on a mg/m² basis). Felodipine, at the doses employed in the two-year rat study, has been shown to lower testicular testosterone and to produce a corresponding increase in serum luteinizing hormone in rats. The Leydig cell tumor development is possibly secondary to these hormonal effects which have not been observed in man.

In this same rat study a dose-related increase in the incidence of focal squamous cell hyperplasia compared to control was observed in the esophageal groove of male and female rats in all dose groups. No other drug-related esophageal or gastric pathology was observed in the rats or with chronic administration in mice and dogs. The latter species, like man, has no anatomical structure comparable to the esophageal groove.

Felodipine was not carcinogenic when fed to mice at doses of up to 138.6 mg/kg/day (28 times the maximum recommended human dose on a mg/m² basis) for periods of up to 80 weeks in males and 99 weeks in females.

Felodipine did not display any mutagenic activity *in vitro* in the Ames microbial mutagenicity test or in the mouse lymphoma forward mutation assay. No clastogenic potential was seen *in vivo* in the mouse micronucleus test at oral doses up to 2500 mg/kg (506 times the maximum recommended human dose on a mg/m² basis) or *in vitro* in a human lymphocyte chromosome aberration assay.

A fertility study in which male and female rats were administered doses of 3.8, 9.6 or 26.9 mg/kg/day showed no significant effect of felodipine on reproductive performance.

Pregnancy: Pregnancy Category C

There are no adequate and well-controlled studies in pregnant women. If felodipine is used during pregnancy, or if the patient becomes pregnant while taking this drug, she should be apprised of the potential hazard to the fetus, possible digital anomalies of the infant, and the potential effects of felodipine on labor and delivery, and on the mammary glands of pregnant females. (See FULL PRESCRIBING INFORMATION.)

Nursing Mothers

It is not known whether this drug is secreted in human milk and because of the potential for serious adverse reactions from felodipine in the infant, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Pediatric Use

Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: In controlled studies in the United States and overseas approximately 3000 patients were treated with felodipine as either the extended-release or the immediate-release formulation.

The most common clinical adverse events reported with PLENDIL® (Felodipine) administered as monotherapy at the recommended dosage range of 2.5 mg to 10 mg once a day were peripheral edema and headache. Peripheral edema was generally mild, but if was age- and dose-related and resulted in discontinuation of therapy in about 3 percent of the enrolled patients. Discontinuation of therapy due to any clinical adverse event occurred in about 6 percent of the patients receiving PLENDIL, principally for peripheral edema, headache, or flushing.

Adverse events that occurred with an incidence of 1.5 percent or greater at any of the recommended doses of 2.5 mg to 10 mg once a day (PLENDIL, N=861, Placebo, N=334), without regard to causality, are compared to placebo and are listed by dose in the table below. These events are reported from controlled clinical trials with patients who were randomized to a fixed dose of PLENDIL or titrated from an initial dose of 2.5 mg or 5 mg once a day. A dose of 20 mg once a day has been evaluated in some clinical studies. Although the antihypertensive effect of PLENDIL is increased at 20 mg once a day, there is a disproportionate increase in adverse events, especially those associated with vasodilatory effects (see DOSAGE AND ADMINISTRATION).

Percent of Patients with Adverse Events in Controlled Trials* of PLENDIL (N=861) as Monotherapy without Regard to Causality

(Incidence of discontinuations shown in parentheses)

Body System Adverse Events	Placebo N=334	2.5 mg N=255	5 mg N=581	10 mg N=408
Body as a Whole				
Peripheral Edema	3.3 (0.0)	2.0 (0.0)	8.8 (2.2)	17.4 (2.5)
Asthenia	3.3 (0.0)	3.9 (0.0)	3.3 (0.0)	2.2 (0.0)
Warm Sensation	0.0 (0.0)	0.0 (0.0)	0.9 (0.2)	1.5 (0.0)
Cardiovascular				
Palpitation	2.4 (0.0)	0.4 (0.0)	1.4 (0.3)	2.5 (0.5)
Digestive				
Nausea	1.5 (0.9)	1.2 (0.0)	1.7 (0.3)	1.0 (0.7)
Dyspepsia	1.2 (0.0)	3.9 (0.0)	0.7 (0.0)	0.5 (0.0)
Constipation	0.9 (0.0)	1.2 (0.0)	0.3 (0.0)	1.5 (0.2)
Nervous				
Headache	10.2 (0.9)	10.6 (0.4)	11.0 (1.7)	14.7 (2.0)
Dizziness	2.7 (0.3)	2.7 (0.0)	3.6 (0.5)	3.7 (0.5)
Paresthesia	1.5 (0.3)	1.6 (0.0)	1.2 (0.0)	1.2 (0.2)
Respiratory				
Upper Respiratory Infection	1.8 (0.0)	3.9 (0.0)	1.9 (0.0)	0.7 (0.0)
Cough	0.3 (0.0)	0.8 (0.0)	1.2 (0.0)	1.7 (0.0)
Rhinorrhea	0.0 (0.0)	1.6 (0.0)	0.2 (0.0)	0.2 (0.0)
Sneezing	0.0 (0.0)	1.6 (0.0)	0.0 (0.0)	0.0 (0.0)
Skin				
Rash	0.9 (0.0)	2.0 (0.0)	0.2 (0.0)	0.2 (0.0)
Flushing	0.9 (0.3)	3.9 (0.0)	5.3 (0.7)	6.9 (1.2)

*Patients in titration studies may have been exposed to more than one dose level of PLENDIL® (Felodipine).

Adverse events that occurred in 0.5 up to 1.5 percent of patients who received PLENDIL in all controlled clinical trials at the recommended dosage range of 2.5 mg to 10 mg once a day and serious adverse events that occurred at a lower rate or events reported during marketing experience (those lower rate events are in italics) are listed below. These events are listed in order of decreasing severity within each category and the relationship of these events to administration of PLENDIL is uncertain: ***Body as a Whole:*** Chest pain, facial edema, flu-like illness; ***Cardiovascular:*** *Myocardial infarction, hypotension, syncope, angina pectoris, arrhythmia,* tachycardia, premature beats; ***Digestive:*** Abdominal pain, diarrhea, vomiting, dry mouth, flatulence, acid regurgitation; ***Hematologic:*** *Anemia;* ***Metabolic:*** ALT (SGPT) increased; ***Musculoskeletal:*** Arthralgia, back pain, leg pain, foot pain, muscle cramps, myalgia, arm pain, knee pain, hip pain; ***Nervous/Psychiatric:*** Insomnia, depression, anxiety disorders, irritability, nervousness, somnolence, decreased libido; ***Respiratory:*** Dyspnea, pharyngitis, bronchitis, influenza, sinusitis, epistaxis, respiratory infection; ***Skin:*** Contusion, erythema, urticaria; ***Special Senses:*** Visual disturbances; ***Urogenital:*** Impotence, urinary frequency, urinary urgency, dysuria, polyuria.

Gingival Hyperplasia: Gingival hyperplasia, usually mild, occurred in <0.5 percent of patients in controlled studies. This condition may be avoided or may regress with improved dental hygiene. (See PRECAUTIONS, *Information for Patients* section.

Clinical Laboratory Test Findings

Serum Electrolytes: No significant effects on serum electrolytes were observed during short- and long-term therapy. (See CLINICAL PHARMACOLOGY, *Renal/Endocrine Effects* section of full Prescribing Information.)

Serum Glucose: No significant effects on fasting serum glucose were observed in patients treated with PLENDIL in the U.S. controlled study.

Liver Enzymes: One of two episodes of elevated serum transaminases decreased once drug was discontinued in clinical studies; no follow-up was available for the other patient.

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July 1995

PLN08

Tobacco free at the Indianapolis 500

Eric D. Blom, Ph.D.
Indianapolis

Abstract

Most children are highly impressionable and easily influenced, particularly by people they admire. Role models in sports and entertainment who publicly use or commercially promote tobacco products potentially influence children to do the same. Motorsports events are saturated with tobacco sponsorship. We describe the counter-promotion of tobacco at the famed Indianapolis 500 and suggest other venues to continue this "Tobacco Free America" theme. ❑

Most of us are influenced during our lifetime by the behavior of others, particularly people we look up to. These role model effects can be both positive and negative. The author vividly remembers the impact that 1950s movie star James Dean had on him during his impressionable youth. His red nylon jacket in "Rebel Without a Cause," and unfortunately the cigarette, temporarily became an absolute must. In the 1990s, the next generation of smokers is probably influenced in much the same way every time another Indiana idol, rock star John Mellencamp, is seen in an MTV video with a cigarette dangling from his lips.

Motorsports also produces idols and heroes that young people look up to. Many of these drivers competed in the 1992 75th running of the Indianapolis 500, which was a particularly historic race. Millions of spectators around the world witnessed the closest finish ever, with Al Unser Jr. beating Scott Goodyear by .043 second. Those same race fans saw the first ever tobacco counter-promotion-sponsored race car competing at the Indianapolis Motor Speedway. Driven by Indy car veteran Dominic Dobson, the car finished 12th *(Figure 1)*, ahead of the multi-million-dollar-sponsored Marlboro cars of Rick Mears and Emerson Fittipaldi.

The Indianapolis 500 is promoted as the single largest sporting event in the world. More than 400,000 race fans attend, and millions of others watch around the globe. The winner becomes an instant motorsports celebrity, and the high visibility of this event makes it a premiere race for the promotion of commercial products, including cigarettes and smokeless tobacco.

Tobacco sponsorship of televised motorsports circumvents federal law prohibiting the advertisement of tobacco products on television in the United States. The brand names and logos appear on race cars, driver uniforms and helmets and on signs strategically positioned in frequent view of spectators and television cameras. In an effort to counter this, the "Tobacco Free America" motorsports promotion was conceived and sponsored by the Head & Neck Cancer Rehabilitation Institute, an Indianapolis-based nonprofit public foundation; Methodist Hospital of Indiana; and the national physicians group, Physicians Ought to Care. This tobacco counter-promotion was endorsed by the national board of directors of the American Medical Association, American Cancer Society, American Lung Association, American Heart Association and the American Academy of Otolaryngology-Head and Neck Surgery. With the exception of a feature article in the *American Medical News*,[1] this first-time effort unfortunately received minimal media coverage despite national press releases by the endorsing institutions. Probably the most enduring anti-tobacco message was established through the free full-size poster of the "Tobacco Free America" Indy car distributed to 125,000 Indianapolis school children.

In 1993, the program was expanded with the "Tobacco Free America" message appearing on the Indy car of veteran driver Scott Pruett in nationally televised races at Portland, Ore.; Long Beach, Calif.; and Indianapolis. Pruett spoke to enthusiastic audiences at local schools, and his remarks were well-covered by the media. A down-to-earth Pruett, casually dressed in blue jeans, described his experiences in Indy car racing and then very effectively expressed his message that "smoking is not the cool thing to do. I have gotten to where I am in racing without smoking, without caving in to peer

pressure and without looking up to people who are smoking."[2]

In 1994 and 1995, the "Tobacco Free America" motorsports message was continued literally on the backs of three young go-cart racers competing throughout the summer in the nationally televised "Saturday Night Lightning" series on ESPN 2 (*Figure* 2). The announcers frequently mentioned the "tobacco free" or "smoke free" cars in reporting the race action. Both years, one of the team drivers finished the season in the top five overall in class among more than 20 entrants. ESPN 2 race coverage was available for viewing in approximately 20 million homes in the United States.

Children and adolescents actively follow motorsports, and famous drivers undoubtedly become their idols and role models, not unlike other sports figures, rock stars and movie actors. At race tracks, they flock to get an autograph from Indy car drivers like Al Unser Jr., who was adorned with Marlboro logos in 1995, presumably by sponsor contract. Research has shown that brand name advertising can eventually influence the consumer choices of children in their lifetime[3-5] despite that not being the stated objective of the tobacco industry.[6]

The "Tobacco Free America" program can and should be replicated in communities throughout Indiana and the United States. It can be applied to Little League baseball, football and soccer or almost any sport that kids participate in either as a team or as an individual. "Tobacco Free America" and the corresponding logo "The Real Winner's Circle," consisting of a circle with crossbar

Figure 1: 1993 Indianapolis 500 qualification photograph of veteran driver Dominic Dobson in the "Tobacco Free America" Indy car. (Courtesy of the Indianapolis Motor Speedway Corporation).

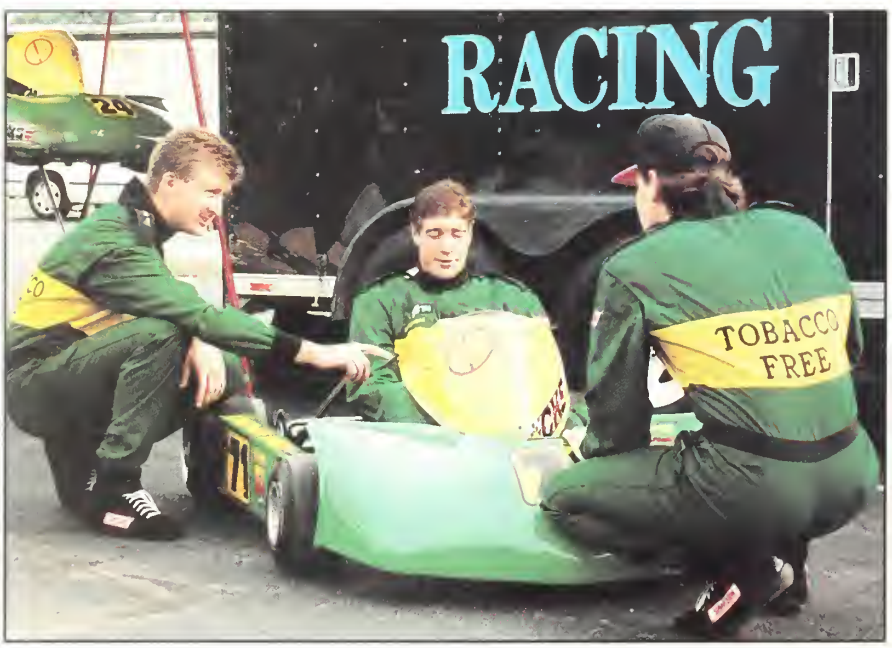

Figure 2: "Tobacco Free America" team go-cart drivers (left to right) Brian Schuman, Boyd Gumpert and Geoff Bushor.

over a cigarette and container of smokeless tobacco, are available logos for use by the general public without any fee *(Figure 2)*. A centrally coordinated but local physician-initiated network of "Tobacco Free America" children's sporting events sprouting up throughout Indiana in the spring of 1996 has tremendous media potential. It would simultaneously convey a highly visible anti-tobacco message as our kids compete and join "The Real Winner's Circle."

Our tobacco counter-promotion in motorsports during the past five years, accomplished with a budget that was microscopic in comparison to the multi-million dollar promotions of the tobacco industry, capitalized on having young, active, successful role models provide a message to kids that smoking and chewing tobacco are not cool and that tobacco consumption can have substantial health consequences. If this program influenced only one kid not to use tobacco in his lifetime, then all the money and effort expended thus far will have been worth it. ❑

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Objectives for CME activity
Upon completion of this journal, the reader should be able to:

- outline the effects of tobacco on the health of Indiana citizens;
- describe the National Cancer Institute's "5A" smoking cessation program;
- describe the impact of the Indiana Prenatal Substance Use Prevention Program in smoking cessation among high-risk pregnant women;
- explain the involvement of the AMA in the control of tobacco;
- discuss the ethical responsibilities of physicians in the control of tobacco;
- delineate the curriculum pertaining to tobacco for medical school, residencies and continuing medical education;
- outline current tobacco legislation in Indiana;
- explain the relevance of the Indiana Project ASSIST;
- outline the unique objectives of tobacco education among individuals of low literacy in the state;
- outline the HCE (Health Care Excel) smoking cessation inpatient guideline initiative;
- give examples of several major tobacco interventions in the workplace;
- outline the treatment for nicotine replacement for hard-core smokers; and
- recognize practical diagnosis and treatment of smokeless tobacco users.

CME questions

Give the best answer(s) to each of the questions below.

1. Which of the following statement(s) regarding smokeless tobacco is/are true?

a. Smokeless tobacco is a safe substitute for cigarette smoking.
b. Most users of smokeless tobacco start in their 20s and 30s.
c. Smokeless tobacco is less addicting than cigarette smoking.
d. Nationwide approximately 10% of children in the seventh, eighth and ninth grades are using smokeless tobacco.
e. All of the above.
f. None of the above.

2. Regarding nicotine replacement therapy (NRT), which of the following statements are false?

a. NRT has been proven to be effective.
b. Approximately 75% of nicotine dependent smokers who are treated with NRT will be abstinent at a two-year follow-up.
c. Cotinine is the biologic measure of choice for monitoring nicotine replacement therapy.
d. NRT should be used only in the context of an overall office-based program for smoking cessation.
e. All of the above.
f. None of the above.

3. Which of the following are components of a successful office-based smoking cessation program?

a. A smoke-free office environment.
b. A system for identifying all smokers and tracking their progress in smoking cessation.
c. A brief physician counseling of all smokers to quit.
d. A system for follow-up support of persons who quit.
e. All of the above.
f. None of the above.

4. A 25-year-old, two-packs-per-day cigarette smoker is seen in the office for an ankle sprain. His history and physical examination are unremarkable except for the mild sprain for which you recommend treatment. You ask the patient if he has ever tried to quit smoking and advise him to do so. The patient is defensive and doesn't want to discuss quitting. Your plan of action at this point might include which of the following: (select one or more)

a. Confront the patient regarding his failure to understand the importance of quitting.
b. Ask the patient if he would take some written material regarding the health effects of tobacco and the importance of quitting.
c. Make a note in the chart to raise the issue of quitting at the patient's next visit.
d. Drop the issue and discharge the patient.

5. The patient returns in six months for a pre-employment medical evaluation. You ask him about his smoking. He indicates that he has thought about quitting but is not sure he can. At this point you would do which of the following?

a. Encourage him to quit and schedule an appointment in three months for follow-up.
b. Prescribe nicotine gum and follow up in two months.
c. Prescribe nicotine patch and follow up in two months.
d. Counsel the patient regarding his commitment to quit. Assess his level of dependency. Discuss the process of quitting and provide information regarding self-help quitting. Schedule a follow-up visit in one month.

6. The most appropriate candidates for using nicotine-containing transdermal patches or nicotine gum are those who:

a. Have a high motivation to quit.
b. Began smoking in early adolescence or childhood.
c. Increase smoking levels to reduce negative moods.
d. Are moderate to heavy cigarette users (25+ per day).
e. All of the above.
f. None of the above.

7. Which of the following statements are correct:

a. Smoking accounts for about 19% of all deaths in the United States.
b. Patients in the "preparation" stage of readiness to quit are twice as likely to stop smoking as those who are in the "contemplation" stage.
c. Including smoking status as part of your patient's vital signs list will increase the likelihood that you will advise the patient regarding smoking cessation.
d. When using the standard 21 or 22 mg per day nicotine patch dose, most smokers will achieve about 90% of their baseline (while still smoking) nicotine replacement dose.
e. For those smoking 40 or more cigarettes per day, a nicotine patch dose of 44 mg per day should be considered.

8. Case study:
John Wright is a 37-year-old owner of a Rapid Copy Center. He has smoked three packs of Marlboros a day for the past 10 years. His wife also smokes but at a lower level. He has two children. This is a follow-up visit for treating his acute bronchitis. He had a fever and productive cough three weeks ago, which has largely been resolved with the use of erythromycin. He has a chronic, non-productive morning cough and a history of developing bronchitis twice in the past two years. His BP is 132/85 and his lungs have occasional rales. All other findings are unremarkable. He has made six, half-hearted attempts to stop smoking, but never quit smoking for more than 12 hours, due to irritability, nervousness and anxiety. Of the options listed below, select six of the best that would give John a chance at quitting.

a. Tell him to quit by tapering off cigarettes over six weeks.
b. Have him set a quit date within the next two to three weeks.
c. Unless his wife agrees to quit, don't even bother trying.
d. Have him stop immediately by quitting "cold turkey."
e. Use "scare" techniques in order to get his attention.
f. Before using patches/gum, attempt to get him down to a pack of cigarettes a day (pretreatment reduction).
g. Start him off on the 7 mg/day nicotine patch to make sure he is not allergic to the patch.
h. If he selects nicotine gum, start him on the 4 mg dose.
i. Send him to someone else who knows what they are doing.
j. Follow up on the patient's quit-smoking progress.
k. Give up. This guy is so "hard core" that he cannot quit.
l. Make sure there is a behavioral component and psychological support during the quitting process.
m. "Chew him out" for continuing to smoke.
n. Urge patients who relapse to try again.

Answers:

1.	d	5.	d
2.	b	6.	all of above
3.	all of above	7.	a, b, c and e
4.	b and c	8.	b, f, h, j, l and n

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SA = strongly agree
A = agree
U = undecided
D = disagree
SD = strongly disagree

1. The objectives of the CME activity were clearly stated.
   SA A U D SD

2. The content of the journal articles was up-to-date.
   SA A U D SD

3. The journal articles illustrated independence, objectivity, balance and scientific rigor.
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4. The content was closely related to objectives of my clinical practice and/or teaching.
   SA A U D SD

5. The journal articles increased my knowledge of the subject.
   SA A U D SD

6. The content of the journal articles met my personal expectation and needs.
   SA A U D SD

7. I will apply the information learned from these articles in my clinical practice.
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Do you have any suggestions as to how to improve the content of the journal articles?

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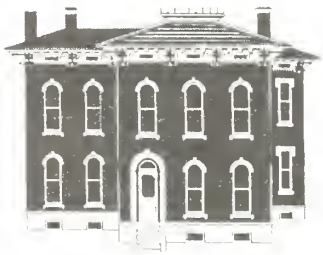

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NEUROLOGICAL SURGERY

ANATOMIC PATHOLOGY

alliance report

Cheryl Haslitt
ISMA Alliance Membership
Development Chair

In these stressful times of government regulation and changes, threats of litigation and advances in technology, the ISMA Alliance (ISMA-A) is a support group for the medical family and an advocate for the medical profession in the legislative arena. The Alliance raises funds for medical education and works for quality health care for all citizens. Now, more than ever, it is important for physician spouses to become members.

All levels of involvement are important. Active membership means attending meetings, implementing community programs and assuming leadership roles. Spouses with limited time may choose occasional participation in short-term community projects. There are those who choose to support the organization simply by paying dues, enabling the alliance to continue legislative activities, support for medical education, health promotions and educational seminars and leadership training. Spouses who live in counties having no organized alliance may choose to become members-at-large. Any spouse of an ISMA member is eligible. Each and every member and level of participation is welcomed and needed.

Even though membership in the ISMA Alliance has been decreasing for the past several years, 10 of 24 organized counties had membership increases for the year ending March 31, 1995. Four of these counties having the largest increases were presented with $50 awards at the annual convention last October. These counties were:

- Monroe-Owen County for the greatest numerical ISMA-A increase (33 members);
- Bartholomew-Brown County for the greatest percentage ISMA-A increase (25%);
- Fort Wayne for the greatest numerical AMA-A increase (37 members); and
- Wells County for the greatest percentage AMA-A increase (87%).

The ISMA Alliance is working to stabilize or increase membership. Currently, dues billing for counties is offered free-of-charge as a service of membership. A letter was recently sent to recruit prospective members-at-large in four counties having no organized alliances. Spouses of residents and interns have been offered free dues for the year. In leadership workshops last spring, county leaders learned about membership recruiting and retention tools developed by the AMA Alliance. County presidents-elect are encouraged to attend the AMA Alliance Confluence, a leadership training session held in Chicago. ISMA staff is assisting the alliance by providing information, support services, advice and advertising.

An investment in ISMA Alliance will pay dividends now and in the future for physician spouses and for medicine. The Alliance also offers:

- support and understanding of other medical spouses who share the unique challenges of medical marriage;
- the opportunity to be involved in the legislative arena, impacting health care issues;
- leadership training, seminars on personal and professional development, enhanced communication skills, networking and opportunities for career development;
- the opportunity to support the education of tomorrow's physicians; and
- the opportunity to support local health programs, projects and education.

For more information about the ISMA Alliance, call Rosanna Iler at the ISMA, 1-800-257-4762 or (317) 261-2060, or Cheryl Haslitt, membership development chair, at (317) 282-9944. ❑

IU Child Care Conference

Indiana University will present the 31st Annual Indiana Multidisciplinary Child Care Conference May 22 and 23 at the Radisson Hotel City Centre Indianapolis.

The conference will address pediatric infectious disease, pediatric diabetology, pediatric rheumatology, pediatric ophthalmology and neonatal resuscitation.

For registration information, write Richard Schreiner, M.D., attn: Mary Ann Underwood, IU School of Medicine, Riley Hospital for Children, Rm 5900, 702 Barnhill Dr., Indianapolis, IN 46202-5225.

Nasser, Smith & Pinkerton

Nasser, Smith & Pinkerton Cardiology Inc. of Indianapolis will present the follow CME programs:

May 10 – Progress in Cardiology IX, Westin Hotel, Indianapolis.
Aug. 23 – NSP International Symposium, Westin Hotel, Indianapolis.
Sept. 25 – Income vs. Outcome, Ritz Charles, Carmel, Ind.
Oct. 4 – Richter Day, Westin Hotel, Indianapolis.

For additional information, call Andrea Speer at (317) 338-6682.

St. Vincent Hospitals

St. Vincent Hospital and Health Services in Indianapolis will present these CME courses:

Mar. 26 – Indiana Dermatopathology Conference – Local, St. Vincent Hospital, Cooling Auditorium, Indianapolis.
Apr. 27-28 – 14th Annual Spring Seminar in Dermatopathology - "Compare Your Diagnoses with Bernie's," St. Vincent Hospital, Cooling Auditorium, Indianapolis.
May 10 – Progress in Cardiology IX, Westin Hotel, Indianapolis.
May 17 – Prenatal Diagnosis, location to be announced.
Oct. 4 – Second Annual Controversies in Ultrasound, location to be announced.

For more information, call Beth Hartauer, (317) 338-3460.

Indiana University

The Indiana University School of Medicine will present the following CME courses:

Apr. 13-14 – Dermatopathology.
Apr. 29 – 20th Annual del Regato Lecture.
May 10 – Hemostasis in Cardiothoracic Surgery.
May 17 – New Horizons in Medicine.
June 6-7 – ASCO.

All courses will be presented at the University Place Conference Center and Hotel in Indianapolis. For more information, call (317) 274-8353.

University of Wisconsin

The University of Wisconsin – Madison Medical School will present these CME courses:

Mar. 29-30 – University of Wisconsin CT Symposium – 10th Anniversary Meeting, Edgewater Hotel, Madison, Wis.
May 2-4 – Electrophysiologic Basis for the Diagnosis and Management of Cardiac Arrhythmias, Hyatt Regency Hotel, Milwaukee, Wis.
May 9-11 – 19th Annual Sports Medicine Symposium, Concourse Hotel, Madison, Wis.
May 14-15 – The Heart of Cardiology is (Still) Echocardiography, Hyatt Regency Hotel, Milwaukee, Wis.

For more information, call Sarah Aslakson, (608) 263-2856.

University of Michigan

The University of Michigan Medical School will sponsor these CME courses:

Mar. 22 – Applied Clinical Informatics Symposium: Topics on Information Systems of Immediate Importance for the Practicing Clinician.
Mar. 28-29 – Challenges and Changes in Obstetrics and Gynecology.
Mar. 30 – Transvaginal Ultrasound Workshop.
Apr. 12-13 – Endoscopic Sinus Surgery.
Apr. 19-20 – The Phlebotomy Team: Technical and Management Perspectives.
Apr. 22-24 – Ultrasound in Obstetrics and Gynecology.

All courses will be held at the Towsley Center in Ann Arbor, Mich. To register, call (313) 763-1400 or 1-800-962-3555. ❑

obituaries

LeRoy R. Aders, M.D.
Dr. Aders, 43, a Kokomo emergency physician, died Nov. 30, 1995, in a plane crash near McClure, Ohio.

He was a 1980 graduate of the Indiana University School of Medicine.

Dr. Aders, who had moved to Kokomo in 1984, was medical director of emergency services at Howard Community Hospital. He was a member of the American College of Emergency Physicians.

Edilberto D. Angulo, M.D.
Dr. Angulo, 68, a pediatrician and allergist from Schererville, died Nov. 3, 1995, at his home.

He was a 1952 graduate of the Boston University School of Medicine and a U.S. Army veteran of the Korean War.

Dr. Angulo practiced in Lansing, Ill., before affiliating with the Jones Clinic in Munster. He later had a solo practice in Dyer. He was affiliated with the Community Hospital in Munster and St. Margaret Hospital in Hammond and served as utilization management physician adviser at both hospitals. He was chief of the pediatrics department at St. Margaret Hospital from 1973 to 1976. Dr. Angulo was a member of the American Academy of Pediatrics and the American College of Allergy and Immunology.

Lowell F. Beggs, M.D.
Dr. Beggs, 84, a retired Columbus general surgeon, died Jan. 11, 1996, at Columbus Regional Hospital.

He was a 1935 graduate of the Indiana University School of Medicine.

Dr. Beggs practiced surgery in Columbus for 43 years, retiring in 1983. He previously was a surgical anatomy teacher at Northwestern University School of Medicine. He was a fellow of the American College of Surgeons and the United States Section of the International College of Surgeons.

Charles H. Caylor, M.D.
Dr. Caylor, 70, a Bluffton urological surgeon, died Nov. 18, 1995.

He was a 1953 graduate of the Loyola University Stritch School of Medicine.

Dr. Caylor was chairman of the Caylor-Nickel Medical Center in Bluffton and the third generation to serve the clinic, founded by his grandfather. He also was chairman of the board of the Caylor-Nickel Research Institute, Account Specialists, Inc., and the Alzheimer's Disease Foundation. Dr. Caylor was a member of the National Association for Hospital Development and a board member of the Old-First National Bank board of directors.

Leon H. Chandler, M.D.
Dr. Chandler, 87, a retired Goshen surgeon, died Dec. 12, 1995, at his home in Florida.

He was a 1938 graduate of the Indiana University School of Medicine.

Dr. Chandler had served as chairman of the surgery department at Goshen General Hospital, which dedicated the surgery wing to him in 1980. He began his medical career in Millersburg and had been chief surgeon at LaGrange County Hospital.

George L. Compton, M.D.
Dr. Compton, 80, a retired Tipton family practice physician, died Nov. 15, 1995, at Riverview Hospital in Noblesville.

He was a 1942 graduate of the Indiana University School of Medicine and an Army Medical Corps veteran of World War II.

Dr. Compton was one of the founding physicians of Tipton County Memorial Hospital. He was a member of the Knights of Columbus and the American Legion.

Preston M. Dunning, M.D.
Dr. Dunning, 76, an occupational medicine specialist from Highland, died Nov. 18, 1995, at The Community Hospital in Munster.

He was a 1943 graduate of the Temple University School of Medicine.

Dr. Dunning joined Inland Steel Co. in 1966 and retired as corporate medical director in 1984. He was a member of the American College of Occupational Medicine, the American Public Health Association, the American College of Preventive Medicine and the original divisional board at Our Lady of Mercy Hospital in Dyer. He also served on the Calumet Area Foundation for Medical Care Coordinated Care Committee and the advisory council of the Indiana University Northwest Center for Medical Education.

Max M. Earl, M.D.
Dr. Earl, 77, a Kokomo internist, died Dec. 15, 1995, at St. Joseph Hospital & Health Center in Kokomo.

He was a 1942 graduate of the Indiana University School of Medicine and an Army veteran of World War II.

Dr. Earl, who had practiced in Kokomo since 1950, was on the staffs of St. Joseph Hospital & Health Center and Howard Community Hospital. In 1952, he was the first physician in Kokomo to be designated a fellow of the

American College of Cardiology. He became known as an expert in treating heart disease.

Ralph V. Ganser, M.D.
Dr. Ganser, a retired South Bend otolaryngologist, died Nov. 13, 1995, in Clearwater, Fla. He had lived in Florida since retiring in 1987.

He was a 1952 graduate of the Pritzker School of Medicine at the University of Chicago and an Army veteran of World War II.

Dr. Ganser began his practice in South Bend in 1956 and headed the North Central Hearing Clinic from 1963 to 1976. He received the 1968 Award of Merit from the Hearing and Speech Center of St. Joseph County. He was a fellow of the American College of Surgeons.

Melvin D. Gardner, M.D.
Dr. Gardner, 90, a retired abdominal surgeon, died Jan. 10, 1996, at his home in Michigan City.

He was a 1929 graduate of the University of Iowa College of Medicine.

Dr. Gardner retired in 1986.

William H. Getty, M.D.
Dr. Getty, 75, a retired Evansville internist, died Dec. 18, 1995, at St. Vincent Hospital in Indianapolis.

He was a 1945 graduate of the University of Michigan Medical School.

Dr. Getty was affiliated with Welborn Clinic for 33 years and was a past president of the Vanderburgh County Medical Society.

Marion W. Hillman, M.D.
Dr. Hillman, 93, former St. Joseph County coroner, died Dec. 10, 1995, at Venice (Fla.) Hospital.

He was a 1928 graduate of the University of Michigan Medical School and an Army Air Corps Medical Corps veteran of World War II.

Dr. Hillman was a family practice physician in South Bend from 1928 to 1963 and served as coroner from 1948 to 1950. He retired in 1966 after serving two years as medical director of Beatty Memorial Hospital in Westville. He had been president of the St. Joseph County Medical Society.

William M. Huse, M.D.
Dr. Huse, 76, a retired Indianapolis obstetrician/gynecologist, died Jan. 3, 1996.

He was a 1943 graduate of the Indiana University School of Medicine and an Army veteran of World War II.

Dr. Huse practiced obstetrics and gynecology for 30 years, retiring in 1983. He had served on the medical staffs of Methodist and St. Vincent hospitals. At Methodist Hospital, he was chairman of the ob/gyn department and a member of the teaching staff. He was a fellow of the American College of Obstetricians and Gynecologists.

James A. McClintock, M.D.
Dr. McClintock, 78, a retired surgeon, died Dec. 20, 1995, at Harrison County Hospital. He was living in Corydon at the time of his death.

He was a 1942 graduate of the Pritzker School of Medicine at the University of Chicago and an Army veteran of World War II.

Dr. McClintock, who set up his practice in Muncie in 1949, practiced general and plastic surgery at Ball Memorial Hospital and was a teaching instructor in the Ball Memorial Nursing program. He also practiced in Hartford City and Corydon. He was a member of the American College of Surgeons.

James Y. McCullough, M.D.
Dr. McCullough, 86, a retired New Albany surgeon, died Dec. 20, 1995, at his home.

He was a 1934 graduate of the University of Pennsylvania School of Medicine.

Dr. McCullough was a member of the faculty of the department of surgery at the University of Louisville and a staff member emeritus at Floyd Memorial Hospital and Health Services.

Philip R. Myers, M.D.
Dr. Myers, 65, a retired South Bend emergency physician, died Jan. 4, 1996, at Memorial Hospital in South Bend.

He was a 1959 graduate of the Indiana University School of Medicine and a Navy veteran of the Korean War.

Dr. Myers retired in 1995 as an emergency department physician at Memorial Hospital. He was president and founder of South Bend Emergency Physicians, former member of the Memorial Hospital Board of Directors, former president of the Memorial Hospital medical staff and founder and former medical director of South Bend Area Paramedics. He was a charter member, charter diplomate, life fellow, past president and member of the board of directors of the American College of Emergency Physicians.

Warren R. Rucker, M.D.
Dr. Rucker, 65, an internist and former mayor of Madison, died Dec. 11, 1995, at King's Daughters' Hospital in Madison.

He was a 1957 graduate of the University of Louisville School of Medicine.

Dr. Rucker had been a staff physician at Madison State Hospital and in private practice. He had

served as Jefferson County health officer, president of the King's Daughters' Hospital medical staff and president of the Jefferson-Switzerland County Medical Society. Dr. Rucker was mayor from 1976 through 1983 and a city councilman from 1967 through 1975. He also was Jefferson County Democratic chairman from 1972 to 1978.

James A. Taylor, M.D.

Dr. Taylor, 75, a retired occupational medicine specialist from Anderson, died Dec. 4, 1995.

He was a 1946 graduate of the St. Louis University School of Medicine.

Dr. Taylor had served as medical director of Delco Battery, Muncie, for 10 years and as medical director of Delco Remy Division, GMC, Anderson for 22 years. He retired in 1986. ❑

isma leadership

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7 – Girdhar Ahuja, Indianapolis (1996)
8 – Susan K. Pyle, Union City (1997)
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10 – John L. Swarner, Valparaiso (1997)
11 – William Mohr, Kokomo (1998)
12 – Scott Wagner, Fort Wayne (1998)
13 – David Hornback, South Bend (1997)
RMS – Dung Nguyen, Indianapolis (1996)
MSS – Erin Baker, Indianapolis (1996)

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C. Dyke Egnatz, Schererville (1997)
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John A. Knote, Lafayette (1996)
Shirley Khalouf, Marion (1996)
William Beeson, Indianapolis (1996)
George Rawls, Indianapolis (1996)

AMA ALTERNATE DELEGATES
(Terms end Dec. 31)
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William Cooper, Columbus (1997)
Max N. Hoffman, Covington (1996)
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Jerome Melchior, Vincennes (1996)

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4 - Pres: Leon Michl, Madison
Secy: Howard Jackson, Madison
Annual Meeting: May 1, 1996
5 - Pres: Ranganath Vedala, Brazil
Secy: Rahim Farid, Brazil
Annual Meeting: May 30, 1996
6 - Pres: Ray Haas, Greenfield
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Annual Meeting: May 8, 1996
7 - Pres: Russell Judd, Indianapolis
Secy: John Schneider, Indianapolis
Annual Meeting: June 19, 1996
8 - Pres: Eugene Roach, Anderson
Secy: Randall Blake, Anderson
Annual Meeting: June 5, 1996
9 - Pres: Michael Stewart, Crawfordsville
Secy: Stephen D. Tharp, Frankfort
Annual Meeting: June 12, 1996
10 - Pres: Frank Hieber, Munster
Secy: Floyd Manley, Hammond
Annual Meeting: April 24, 1996
11 - Pres: William Mohr, Kokomo
Secy: Jack Higgins, Kokomo
Annual Meeting: Sept. 11, 1996
12 - Pres: David Haines, Warsaw
Secy: Robert Dykstra, Fort Wayne
Annual Meeting: Sept. 10, 1996
13 - Pres: Mohammad Arab, LaPorte
Secy: Donald Smith, South Bend
Annual Meeting: March 20, 1996

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classifieds

SEEKING PRIMARY CARE PHYSICIANS to provide general medical services to inmates at a correctional facility located in the Terre Haute area. Indiana license required. Malpractice coverage available. Contact in confidence: ANNASHAE CORPORATION, Professional Healthcare Staffing, 1-800-245-2662.

CLINICAL DIRECTOR, Community Health Clinic. BC primary care physician, MBA/MPH degreed, to serve as clinical director. Responsibilities are 60% clinical and 40% administrative to start, with gradual transition into strictly administrative position. Will develop, coordinate and supervise clinical care programs ensuring compliance with guidelines, schedule provider personnel, implement and maintain quality improvement programs, represent provider staff to the community board. A new 2.2M facility to be completed in 1997, funding in place, will more than triple the space of the current building. You won't be alone; there is considerable support from the local medical community. Safe and family oriented, with great schools, Lafayette is a cosmopolitan city complemented by Purdue University acdemics and activities. Contact Debby Weber, Recruitment, P.O. Box 5545, Lafayette, IN 47904, (317) 448-8711.

FOR SALE – 1912 dinner service for 12, T. Haviland, white with gold trim, six service dishes, 92 pieces, $650. Louis XVI Ormolu commode, Burl walnut, marble top and gilded metal drawers, $1500. Chippendale style mahogany bookcase with graduated drawers on bracket feet, $2,600. Green and gold Chinese lacquer cabinet, 5 feet tall, interior has many small drawers, $1,900. Mahogany sideboard, Federal style, $1,000. Bocar oriental red runner, 16 feet long, $600. Call (317) 253-1865.

CENTRAL INDIANA medical consulting organization seeking permanent part-time board-certified/eligible family practitioner, internist or OM physician to provide consulting services and health evaluations for business and public safety organizations. Flexible schedule, unique opportunity and excellent potential for growth. Please send curriculum vitae to P.O. Box 44142, Indianapolis, IN 46244.

FOR SALE – Endoscopes. 2 Ritter electro-hydraulic exam chairs, $900 each. Shampaign OB/GYN table, model #2605NL, never used. $1,000. Amsco electric table, model #2080, $1,200. Exam floor, ceiling rail lights. Hydro therapy tubs. Autoclaves. Microscopes, steroptic, etc. Pediatric scales, digital and manual. X-ray units, viewers, cassettes, tanks. Ultrasound cleaner. Blood bank freezer. Blood chemical and analyzer QBC. ECG monitors. GE SRT Ultrasound 3.0 sector-3.5 linear transducers, excellent condition, $2,500. Siemans Sircam 103-100mm film camera with receiver and carrier, A-1 condition, $2,500. Send for list of much more equipment. Phone, fax or write Bernard Medical, 1555 Dixie Highway, Park Hills (Covington) KY 41011, (606) 581-5205.

URGENT CARE PHYSICIANS WANTED: Arnett Clinic, 115-physician multispecialty, seeking BC/BE FP candidates for our two urgent care centers in Lafayette. 12-hour shifts, 8 a.m. to 8 p.m. Approximately 50-60 patients per day. Many benefits including CME funds, professional liability, relocation. Dynamic community, a great place to live, *Money* magazine top 20. Physician Recruitment, Arnett Clinic, P.O. Box 5545, Lafayette, IN 47904. (317) 448-8000, 1-800-899-8448.

PROGRESSIVE OB/GYN PHYSICIAN GROUP in northwest Indiana seeking BE/BC pediatrician. This is a busy established practice doing approximately 40 deliveries per month that wants to work together as an alliance. Our office is affiliated with three contemporary hospitals that all have state-of-the-art technology, a level II+ nursery, outstanding nursing staff as well as full-time anesthesia and newborn intensive coverage. Northwest Indiana offers a quality lifestyle and easy access to Chicago with all of its wonderful cultural and recreational activities. Excellent compensation and benefits package that is negotiable. Start immediately. Please send CV to The Woman's Wellness Center, Rhonda Volk, Office Manager, 9136 Columbia Ave., Munster, IN 46321.

OPPORTUNITY FOR PHYSICIAN – Established or newly licensed MD for the practice of general medicine. Share in the care of patient clientele. Opportunity for growth and for possible takeover of practice. For private and confidential interview, phone (317) 447-1412, Mon., Tues., Thurs., 9 to 5. Phone (317) 447-1693 after 4 p.m.

MEDICAL PRACTICE WITH ESTABLISHED OFFICE AVAILABLE in Columbus, half-mile from Columbus Regional Hospital, junction of State Road 46 and U.S. 31. 30+ year-old medical practice left vacant by retirement of family practitioner. Only expense required to assume practice is rent, utilities and general office overhead. 1,200 square feet, fully furnished, low-maintenance office in professional complex. Exterior maintenance, snow removal included. Ideal opportunity for new physician. Contact Mrs. White, 2756 25th St., Suite 500, Columbus, IN 47203; fax (812) 372-0998; phone (812) 379-4494 days only.

RETIRED PHYSICIANS – Thinking of retiring from the battle over shrinking medical payments? Leave these headaches to us. We are looking for seasoned primary care physicians (all specialties) who want to work 1/2 or 3/4 days several times a month. We are located on Lake Michigan in northern Indiana. Please call (219) 874-2500.

115-PHYSICIAN MIDWEST MULTI-SPECIALTY seeking BE/BC candidates: family medicine, pediatrics, urgent care. Serving 14 counties with a population draw of over 320,000. Guaranteed salary first two years, relocation expenses, CME funds, paid professional liability, investment plans, all part of the many benefits. A safe, thriving family community with stable economy offers a rewarding quality of life. Through Purdue University we enjoy academics, cultural events, entertainment and Big 10 sports. Physician Recruitment, Arnett Clinic, P.O. Box 5545, Lafayette, IN 47904, (317) 448-8000, 1-800-899-8448.

SOUTHWESTERN OHIO, Greater Cincinnati Area: Board-eligible or board-certified family practitioner wanted to join existing practice. Several opportunities available. One in eight call. No OB. Income guaranteed (up to $120,000 based on qualifications and experience) for up to 2 years. Relocation expenses. Malpractice paid for guarantee period. 250-bed, full-service, JCAHO-accredited acute care community hospital. Beautiful community and very affordable standard of living. Excellent public and private school systems. Great cultural and recreational opportunities. For information, call Lynn Oswald, Vice President, Fort Hamilton-Hughes Hospital, at (513) 867-2621.

PEDIATRICIAN, BC/BE, to join general pediatrician and neonatologist-pediatrician in northwest Indiana. Superior schools and community, many recreational opportunities, 50 miles from Chicago. Six weeks per year PGE and vacation. Early full partnership. Send CV and cover letter to Drs. Covey and Marquez, South Ridge Pediatric Center, P.C., Suite 3, 2101 Comeford Road, Valparaiso, IN 46383.

MULTIPLE AND VARIED physician practice opportunities currently exist both within and outside Indiana. Call Patti Quiring at work, (317) 841-7575, or at home, (317) 823-4746. Patti is a physician recruiter for Quiring Associates, an executive search firm headquartered in Indianapolis. ❑

Classified advertising rates

Classified advertisements are published as a service to members of the Indiana State Medical Association. Only ads considered to be of advantage to members will be accepted. Advertisements of a truly commercial nature (ie: firms selling brand products, services, etc.) will be considered for display advertising. All orders must be in writing and will automatically be set in regular classified type. Box numbers are not available.

Charges:
* ISMA members ..... 25¢/word ($15 minimum)
* Non-members ..... 75¢/word ($30 minimum)

Deadline: Six weeks preceding month of publication.

Payment procedure: Payment in advance is not required. Invoices and tearsheets are mailed to advertisers upon publication. *Indiana Medicine* is issued on the 10th of the month six times a year, in January, March, May, July, September and November.

Address: *Indiana Medicine*, 322 Canal Walk, Indianapolis, IN 46202-3268.

Advertisements for employment containing specifications as to race, creed, color, age, religion, sex, ethnic origin or national origin may be unlawful and professionally improper. Accordingly, discriminatory wording is not acceptable in *Indiana Medicine*. In such a case, *Indiana Medicine* will modify the wording and notify the advertiser of the change.

Advertising index

In accepting advertising for publication, *Indiana Medicine* has exercised reasonable precaution to ensure that only reputable, factual advertisements are included. However, we do not have facilities to make comprehensive or complete investigation, and the claims made by advertisers in behalf of goods, services, medicinal preparations, apparatus or physical appliances are to be regarded as those of the advertisers only. Neither sanction nor endorsement of such is warranted, stated or implied by the association.

Are you moving?

If so, please send change of address to the Indiana State Medical Association, Membership Department, 322 Canal Walk, Indianapolis, IN 46202-3268, at least six weeks before you move.

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Comprehensive Major Medical Protection

		$1Million Human Organ or Tissue Transplant Benefit	$2 Million Major Medical Maximum Benefit	PCS Prescription Drug Card
250	■ $250 calendar year deductible, $500 per family ■ Stop-Loss limit $5,000 per person, $10,000 per family	✓	✓	✓
500	■ $500 calendar year deductible, $1,000 per family ■ Stop-Loss limit $5,000 per person, $10,000 per family	✓	✓	
1,000	■ $1,000 calendar year deductible, $2,000 per family ■ Stop-Loss limit $5,000 per person, $10,000 per family	✓	✓	
2,000	■ $2,000 calendar year deductible, $6,000 per family ■ Stop-Loss limit $10,000 per person, $30,000 per family	✓	✓	
5,000	■ $5,000 calendar year deductible, $15,000 per family ■ Stop-Loss limit $25,000 per person, $50,000 per family	✓	✓	

A PPN option is available with each plan and includes incentivized benefits when Premium Preferred Providers are utilized.

Medicare Supplement

- 365 Days of Inpatient Hospital Care
- 100% payment semi-private or hospital ward room
- 365 Days of In-Hospital Medical Care
- 100% Usual, Customary and Reasonable allowances for surgery, general anesthesia, medical visits, radiation therapy, and other eligible inpatient hospital charges
- $1 Million Human Organ or Tissue Transplant Benefit
- $2 Million Major Medical Benefits ($100 calendar year deductible)

Medical Reimbursement Plan

- Tax deductible to the professional corporation

Dental Plan

- Usual, Customary and Reasonable allowances for necessary care and treatment for dental health - $50 calendar year deductible, $100 per family
- Routine dental care paid at 80%
- Major dental care paid at 50%, following one year participation in the plan
- Orthodontia paid at 50%, following one year participation in the plan with $1,000 lifetime maximum benefit per person
- $1,500 maximum dental benefit per person per calendar year

Indiana State Medical Association

Available through the ISMA Insurance Agency.

For more information regarding these coverages contact the ISMA Insurance Agency.

1-800-442-ISMA